

DRAFT AMBIENT AIR INVESTIGATION RESULTS SUMMARY REPORT

**Franklin Power Products, Inc. / Amphenol Corporation
Administrative Order on Consent, Docket #R8H-5-99-002
EPA ID # IND 044 587 848
980 Hurricane Road
Franklin, Indiana 46131**

Prepared For:

**Carolyn Bury
United States Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604**

Date: August 9, 2018

Prepared by:

**IWM Consulting Group, LLC
7428 Rockville Road
Indianapolis, IN 46214
Phone No. (317) 347-1111
Fax No. (317) 347-9326**

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7428 Rockville Road | Indianapolis, IN 46214 | 317.347.1111 office | 317.347.9326 fax

August 9, 2018

Ms. Carolyn Bury
Project Manager
Corrective Action Section 2
Remediation and Re-use Branch
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: **Draft Ambient Air Investigation Results Summary Report
Franklin Power Products, Inc./Amphenol Corporation
Administrative Order on Consent, Docket # R8H-5-99-002
EPA ID # IND 044 587 848
980 Hurricane Road
Franklin, Indiana 46131**

Dear Ms. Bury:

In accordance with the Ambient Air Investigation Work Plan (Work Plan) dated July 25, 2018, Industrial Waste Management Consulting Group, LLC (IWM Consulting), on behalf of the "Performing Respondent", Amphenol Corporation, is submitting this Ambient Air Investigation Results Summary Report (Summary Report). The Work Plan was conditionally approved by the United States Environmental Protection Agency (USEPA) in a letter dated July 25, 2018. The ambient air investigation activities were completed at the Former Amphenol Facility located at 980 Hurricane Road, Franklin, IN (Site).

The purpose of the investigation was as follows:

- 1) Investigate whether ambient air at the Site is impacted by volatile organic compounds (VOCs) above USEPA risk-based regional screening levels.
- 2) Determine whether emissions from the groundwater remedial system venting pipe is a source of VOC contamination to ambient air, and
- 3) Determine the extent of VOC migration up to the property boundary in a downwind ambient air direction.

The proposed work activities were completed on July 26, 2018 and this Summary Report describes the conditions present during implementation of the work activities, discusses the work activities completed, summarizes the laboratory analytical results, and answers the questions regarding the presence and extent of VOCs in the ambient air on the Site.

A site vicinity map is provided as **Figure 1**, which displays the location of the Site and properties in the vicinity of the Site. A copy of the USEPA Conditional Approval letter dated July 25, 2018 is provided as **Attachment A**.

Remedial System Operational Status and Weather Conditions

The existing groundwater remedial system was fully operational prior to and during the duration of the sampling activities. The system was operating under normal conditions with respect to groundwater recovery and air stripper operations. Supporting information includes the fact that the average pumping rate, based upon



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totalizer readings obtained on July 17, 2018 (9 days prior to the sampling event) and July 27, 2018 (1 day after the sampling event) indicate a total average pumping rate of approximately 29.39 gallons per minute, which is consistent with the historical total combined pumping rates. A representative from the Indiana Department of Environmental Management (IDEM), Mr. Don Stilz, was also onsite during the entire sampling event and observed the operational status of all recovery wells and the air stripper during the sampling event. The maximum height of the groundwater remedial system air stripper exhaust pipe is approximately 190-inches (15.83 feet) above ground surface.

Prior to finalizing the ambient air sampling locations, IWM Consulting personnel installed a Vantage Pro2 Plus weather station in the open grass lot on the southern portion of the Site, approximately 65 feet southeast of the existing groundwater remedial system building. The weather station was installed at approximately 7:45 AM and the weather anemometer vane was installed at a height of 60-inches, which is within the pre-determined air sample intake height (ranging between 48-inches and 72-inches) to be utilized during the sampling event. This height corresponds to the typical breathing zone. The weather station recorded the wind direction, speed, temperature, barometric pressure, and humidity. The weather station indicated the predominant wind direction immediately prior to the sampling activities was from the southwest, with an average wind speed of 3 miles per hour (mph). Based upon this information, the sampling locations were finalized and the sampling activities were initiated at 09:37 AM. All of the sampling activities were completed by 5:39 PM.

The weather station was in continuous operation during the sampling activities and readings were recorded on a field sheet approximately every 15-20 minutes. The wind direction and speed varied throughout the duration of the test, with documented wind directions originating from the south, south/southwest, southwest, west/southwest, and west and the documented wind speed ranged from 1 – 9 mph. The overall predominant wind direction during the test was from the southwest and the median wind speed was ~4 mph. The temperature ranged between 73° F and 84° F, the barometric pressure ranged between 29.86 and 29.93 inches Hg, and the humidity ranged between 55% and 76%. A brief rainstorm occurred near the conclusion of the test (between 5:37 and 5:54 PM) and approximately 0.15 inches of precipitation occurred during this time period. Only one sample canister (AA-1 North #1 (980 Hurricane)) was still in operation during the rain event. However, a 3-foot long stainless-steel sampling cane was attached to the intake of the summa canister so no precipitation was able to directly enter into or restrict the intake of the summa canister. A field log sheet for the documented weather conditions during the sampling event is provided as **Attachment B** and a Wind Rose diagram illustrating wind direction and speed observed during the sampling event is provided as **Attachment C**.

Air Stripper Exhaust Pipe Sampling Port Installation Activities

The sampling port installed on the groundwater treatment system air stripper exhaust pipe (4-inch diameter PVC) consisted of a ¼-inch brass PT-plug equipped with a neoprene seal. A 1/8-inch diameter stainless steel probe equipped with a threaded connection and brass nipple was then inserted into the plug (extending through the neoprene seals and then approximately 1-inch into the exhaust pipe) and securely attached to the PT-plug using the threaded connection. A short piece of Tygon tubing was then utilized to attach the end of the brass nipple to the Nyaflo tubing leading to the summa canister. This type of connection ensured that the air sampling port was tight and minimized any possibility of ambient air from within the treatment building being introduced during the sampling activities. Photographs of the sampling port setup are provided in **Attachment D**.

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Air Sampling Activities

Per the conditionally approved Work Plan, IWM Consulting mobilized to the Site the morning of July 26, 2018 in order to obtain a total of seven (7) individual air samples, which included one (1) duplicate air sample. A photographic log documenting the sampling activities is provided as **Attachment D**. All of the samples were obtained utilizing individually certified 6-liter stainless steel summa canisters equipped with 8-hour flow regulators. The air sampling identifications, locations, and purpose are summarized in the following table.

Table 1

Sample ID	Sample Location	Sampling Rationale
AS Effluent #1 (980 Hurricane)	Exhaust Pipe of existing groundwater recovery system's air stripper, located inside building	Determine VOC concentration of the groundwater recovery system air stripper exhaust
AA-1 North #1 (980 Hurricane)	Northern perimeter of the Facility	North perimeter sampling location (cross wind direction)
AA-2 East #1 (980 Hurricane)	Eastern perimeter of the Facility	East perimeter sampling location, downwind of the groundwater recovery system air stripper exhaust
AA-3 South #1 (980 Hurricane)	Southern perimeter of the Facility	South perimeter sampling location (upwind direction)
AA-4 West #1 (980 Hurricane)	Southwestern perimeter of the Facility	West perimeter sampling location, closest to the treatment system building, between the treatment system and the adjacent residential property (upwind direction)
AA-5 West #2 (980 Hurricane)	West central perimeter of the Facility	Secondary west perimeter sampling location (upwind direction)
AA Duplicate (980 Hurricane)	Duplicate sample obtained from the downwind perimeter sampling location (AA-2 East #1)	Obtained for Quality Assurance/Quality Control (QA/QC) purposes

As previously noted, a representative from IDEM was present during the entire sampling event and agreed with all of the final sampling locations (displayed by location on **Figure 2**). The sampling locations generally corresponded to the originally proposed sampling locations, although in accordance with the Conditional Approval from the USEPA, the following sampling locations were moved slightly based upon the documented wind direction and site conditions observed during the sampling event:

- **AA-2 East #1 (980 Hurricane):** Moved approximately 145 feet north along the east property line to account for a predominant wind direction from the southwest.
- **AA-3 South #1 (980 Hurricane):** Moved approximately 30 feet west along the south property line to account for a predominant wind direction from the southwest.
- **AA-4 West #1 (980 Hurricane):** Moved approximately 60 feet north along the west property line to account for a predominant wind direction from the southwest.

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Pertinent Sampling Information

All of the samples were obtained in accordance with the approved Work Plan and associated Standard Operating Procedure (SOP) for collection of Outside Ambient Air Samples. The individual summa canisters were pressure tested by IWM Consulting on July 25, 2018 for 15 minutes and all of the canisters were determined to be tight and within 1-inch of mercury from the laboratory documented pressures prior to shipment. Key information pertaining to each sampling point is summarized in the following tables:

Table 2

Sample ID	Sample Location Distance from Air Stripper Exhaust Pipe	Sample Location Direction from Air Stripper Exhaust Pipe	Intake Height (inches & feet above ground surface)	*Documented Pressure at the Laboratory (prior to shipment to IWM Consulting)	**Documented Pressure on the Individual Pressure Gauge after receipt by IWM Consulting
AS Effluent #1 (980 Hurricane)	Not applicable: sample obtained directly from the exhaust pipe of the existing groundwater recovery system's air stripper	Not applicable	30-inches above the top of the air stripper inside the treatment building; ~105-inches above ground surface	-30 inches Hg	-29 inches Hg
AA-1 North #1 (980 Hurricane)	~870 feet	N/NW	60-inches (5 feet)	-30 inches Hg	-30 inches Hg
AA-2 East #1 (980 Hurricane)	~235 feet	NE	52-inches (4.33 feet)	-30 inches Hg	-30 inches Hg
AA-3 South #1 (980 Hurricane)	~175 feet	S/SW	63-inches (5.25 feet)	-30 inches Hg	-30 inches + Hg
AA-4 West #1 (980 Hurricane)	~70 feet	W	51-inches (4.25 feet)	-30 inches Hg	-29 inches Hg
AA-5 West #2 (980 Hurricane)	~585	W/NW	65-inches (5.42 feet)	-30 inches Hg	-30 inches Hg
AA Duplicate (980 Hurricane)	~235 feet	NE	52-inches (4.33 feet)	-30 inches Hg	-30 inches Hg

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Stainless steel sampling canes (3 feet in length) and/or other platforms were utilized to ensure that the intake of each individual sampling intake was set to the appropriate sampling height (4 – 6 feet above ground surface). Once the summa canisters were positioned, measurements were obtained in the field to confirm the height of the sampling intake and a representative from IDEM was onsite to observe and confirm these measurements. The duplicate sample will be attached to the parent sample with a stainless steel split sampling “tee” and utilized only one (1) common flow regulator.

Table 3

Sample ID	*Initial Summa Canister Vacuum Measurement (inches Hg)	**Final Summa Canister Field Vacuum Measurement (inches Hg)	*Summa Canister Vacuum Measurement Upon Arrival at Laboratory (inches Hg)	Sample Start Time	Sample End Time
AS Effluent #1 (980 Hurricane)	-29	-3	-3.5	9:37 AM	5:25 PM
AA-1 North #1 (980 Hurricane)	-30	-3	-4	9:43 AM	5:39 PM
AA-2 East #1 (980 Hurricane)	-30	-3	-4	9:40 AM	4:31 PM
AA-3 South #1 (980 Hurricane)	-30	-11	-3.5	9:37 AM	5:37 PM
AA-4 West #1 (980 Hurricane)	-29	-2.5	-4.5	9:38 AM	5:05 PM
AA-5 West #2 (980 Hurricane)	-30	-3	-4.5	9:46 AM	5:16 PM
AA Duplicate (980 Hurricane)	-30	-3	-4	9:40 AM	4:31 PM

* Based upon documented measurements utilizing the testing equipment (manufactured by Omega Engineering) at the laboratory, and not the pressure gauge attached to each canister.

** Pressure measurements obtained from the pressure gauge of each canister while in the field at the conclusion of the sampling event.

Pace Analytical Services, LLC (Pace) supplied all of the summa canisters, pressure gauges, and flow regulators for this project. Upon receipt at the laboratory, representatives from Pace tested the pressure gauge attached to

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the AA-3 South #1 (980 Hurricane) summa canister and confirmed that the pressure gauge was malfunctioning and providing an inaccurate measurement in the field (11-inches of Hg). The actual pressure of the canister, as measured in the laboratory prior to analysis, was 3.5-inches of Hg. This information is detailed in the footnote section of the corresponding laboratory report.

As noted above, the total sample times ranged between 6 hours and 51 minutes (AA-2 East #1 and AA Duplicate) and 8 hours (AA-3 South #1). Per the approved Outside Ambient Air SOP, the sampling activities were considered complete if the 8-hour sampling period was reached or if the field measured pressures displayed values of -3 inches of Hg. The exact reason for the shorter sampling period is not known but is likely a result of either a faulty field pressure gauge (indicating that the correct pressure had been reached when in fact it had not been reached) or a slight variation in the rate of intake for the laboratory provided flow regulator.

Sample Submittal Procedures and Analytical Methods

All of the samples were labeled in the field utilizing the sample tags attached to the summa canisters by the laboratory. Information included on the sample labels included the sample ID, sample date, sample time, and the requested analysis. A site-specific chain-of-custody (COC) was also completed and included all of the pertinent sampling information (i.e. sample ID, sample date, sample start and end time, initial and final field pressure readings, summa canister ID, flow controller ID, and the requested analysis). As indicated on the COC, the sample end time originally recorded on the COC was incorrectly noted as 15:39 instead of 17:39. This was noted and corrected on the COC using proper protocols and the corresponding laboratory report was generated using the correct ending time. IDEM was onsite during the sampling activities and can confirm the ending time of this sampling location was 17:39 instead of 15:39.

The samples and associated COC were then placed within the shipping boxes provided by the laboratory (including the associated foam packing) and the boxes were closed and secured with tape. The samples were then shipped via overnight delivery to Pace Analytical Services, LLC (Pace) located in Minneapolis, MN. The samples were submitted for analysis of shortlist VOCs using USEPA Analytical Method TO-15/TO-15 SIM. The shortlist VOCs include the following compounds: vinyl chloride (VC), 1,1 dichloroethane (1,1 DCA), trans 1,2-dichloroethene (trans 1,2 DCE), cis 1,2 DCE, 1,2 DCA, methylene chloride, 1,1,1 trichloroethane (1,1,1 TCA), trichloroethylene (TCE), and tetrachloroethylene (PCE). All of the shortlist VOCs were analyzed using USEPA Analytical Method TO-15, with the exception of TCE, 1,2 DCA, and VC, which utilized USEPA Analytical Method TO-15 SIM in order to meet a lower reporting limit requirements. The samples were analyzed on an expedited turnaround time (24-hour) and Pace provided Level IV Quality Assurance/Quality Control documentation.

Sample Analytical Results

The air sample (AS Effluent #1 (980 Hurricane)) obtained directly from the groundwater treatment system air stripper exhaust pipe exhibited the presence of all of the shortlist VOCs, with the exception of methylene chloride. The VOCs exhibiting the highest concentrations were PCE (1,950 $\mu\text{g}/\text{m}^3$) and TCE (665 $\mu\text{g}/\text{m}^3$), which is consistent with the dissolved VOC concentrations of the groundwater being actively recovered and treated by the groundwater treatment system. The total VOC concentration for this sample was 3,383.3 $\mu\text{g}/\text{m}^3$.

The ambient air samples obtained from the northern (AA-1 North #1 (980 Hurricane)) and southern (AA-3 South #1 (980 Hurricane)) property boundaries exhibited non-detectable concentrations for all VOCs. The ambient air samples obtained from the western (upwind) and eastern (downwind) property boundaries exhibited



the presence of TCE, but all of the TCE concentrations were less than the corresponding USEPA Regional Cancer Screening Levels for Residential Ambient Air ($0.48 \mu\text{g}/\text{m}^3$) and Composite Worker Ambient Air ($3.0 \mu\text{g}/\text{m}^3$).

The downwind ambient air sample (AA-2 East #1 (980 Hurricane)) obtained along the eastern property boundary exhibited a TCE concentration of $0.20 \mu\text{g}/\text{m}^3$. The duplicate ambient air sample (AA-Duplicate (980 Hurricane)) obtained from the same location exhibited a TCE concentration of $0.16 \mu\text{g}/\text{m}^3$. These results exhibited good correlation with respect to the report analytical results. Both of these samples were obtained from the downwind side of the groundwater recovery system air stripper exhaust pipe.

The ambient air sample AA-4 West #1 (980 Hurricane), which was obtained along the southwestern property boundary exhibited a TCE concentration of $0.087 \mu\text{g}/\text{m}^3$. The ambient air sample AA-5 West #2 (980 Hurricane), which was obtained along the west central property boundary exhibited a TCE concentration of $0.43 \mu\text{g}/\text{m}^3$, which is the highest outside ambient air TCE concentration detected during this sampling event. Both of these samples were obtained from the upwind side of the property boundary.

Since the analytical method to analyze TCE, 1,2 DCA, and VC were changed from USEPA Analytical Method TO-15 to USEPA Analytical Method TO-15 SIM the day before (July 25, 2018) the sampling event, all of the individual summa canisters were analyzed prior to shipment on July 23, 2018 using USEPA Analytical Method TO-15, which has a method detection limit of $0.268 \mu\text{g}/\text{m}^3$ and a reporting limit of $0.546 \mu\text{g}/\text{m}^3$. All of the summa canisters exhibited non-detectable concentrations of VOCs with the exception of the canister (ID #1265) utilized for air sampling location AA-2 East #1 (980 Hurricane). Pace reported a j-flagged concentration of $0.48 \mu\text{g}/\text{m}^3$ which indicates the TCE sample results reported for the sample (AA-2 East (980 Hurricane)) utilizing this summa canister may be biased high. When the laboratory reports a j-flagged concentration, it corresponds to an estimated concentration that has a value between the laboratory method detection limit and the laboratory reporting limit. This was properly qualified in the laboratory report and in the 3rd Party Validation Report.

The analytical results are summarized in table format in **Attachment E** and displayed by location on **Figure 2**. A copy of the laboratory analytical report and associated chain of custody is provided as **Attachment F**.

3rd Party Validation

The 3rd Party Validation activities were completed by Laboratory Data Consultants, Inc. (LDC) located in Carlsbad, California. The following conclusions were developed based upon the 3rd Party validation review activities:

- The review indicated that the laboratory analysis was conducted within all specifications of the method. No results were rejected in the Sample Delivery Group reviewed.
- Due to canister blank contamination, data were qualified as not detected in one (1) sample (AA-2 East (980 Hurricane)).
- The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the data validation all other results are considered valid and usable for all purposes.

A copy of the LDC Data Validation Report is provided as **Attachment G**.

Conclusions

Based upon the information obtained during this investigation, the following conclusions have been developed:

- The onsite weather station documented that the predominant wind direction during the sampling event was from the southwest, with slight variations throughout the day. A representative from IDEM was onsite during the duration of the sampling activities and was in agreement with all sampling locations. IDEM personnel also visually confirmed the operational status of the groundwater recovery treatment system, the air sampling intake heights, and that the sampling activities were completed in a manner consistent with the approved Work Plan.
- The air sample obtained directly from the groundwater remedial system air stripper exhaust pipe exhibited the presence of VOCs and based upon the concentrations and air flow rate (measured to be 70 cubic feet per minute), the total estimated VOC emissions is 0.021 lbs./day for total VOCs (equal to approximately 7.77 lbs./year). This data, coupled with estimated air emission calculations determined by using the groundwater flow and dissolved VOC concentrations for the last 3 years (estimated to be 28.92 pounds/year (equivalent to 0.079 lbs./day), confirms that the groundwater remedial system is exempt from air permitting and/or registration requirements and no active treatment of the exhaust is required from IDEM. A spreadsheet summarizing the estimated air emission calculations based upon the newly obtained information is provided in **Attachment H**.
- All of the Site perimeter ambient air samples exhibited individual VOC concentrations below the USEPA Regional Screening Levels for both Residential and Composite Worker Ambient Air. This data confirms that the existing groundwater remedial system air stripper exhaust is not migrating beyond the Site property line at concentrations in excess of the applicable USEPA Regional Screening Levels.
- The highest reported outside ambient air TCE concentration ($0.43 \mu\text{g}/\text{m}^3$) was obtained from the ambient air sample (AA-5 West #2 (980 Hurricane)) collected from the upwind side of the Site. This suggests that an offsite source of TCE may be present west/southwest of the west central portion of the Site.
- Although an end of the pipe treatment system is not required to be installed on the groundwater remedial system exhaust pipe, Amphenol intends to install a vapor carbon treatment system as quickly as possible. The expectation is that the vapor treatment system, consisting of a small moisture knockout tank and a 1,000-lb capacity vapor carbon unit (Model VF-1000), which was installed and became fully operational on August 3, 2018. Photographs of the newly installed vapor carbon unit are provided in **Attachment D**. Drawings depicting the vapor carbon unit and associated piping along with specification sheets pertaining to the key vapor treatment system components are included in **Attachment I**. As previously discussed with the USEPA, in order to get the vapor treatment system installed as quickly as possible, the installation activities had to occur prior to receiving a final design approval from the USEPA. Amphenol understands that modifications may be requested in the future and is committed to incorporating any modifications that may be requested by the USEPA.

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As detailed in this document, the work activities were implemented as outlined in the approved Work Plan and the sample analytical results confirm that the ambient air along all property lines meet both the Residential and Composite Worker USEPA Regional Screening Levels for ambient air. Please contact the undersigned if you have any questions regarding this submittal.

Sincerely,

IWM CONSULTING GROUP, LLC

Bradley E. Gentry, LPG #2165
Vice President/Brownfield Coordinator

Gregory S. Scarpone, LPG #2030
Vice President Environmental Services

cc: Mr. Joseph Bianchi, Amphenol (electronic only)

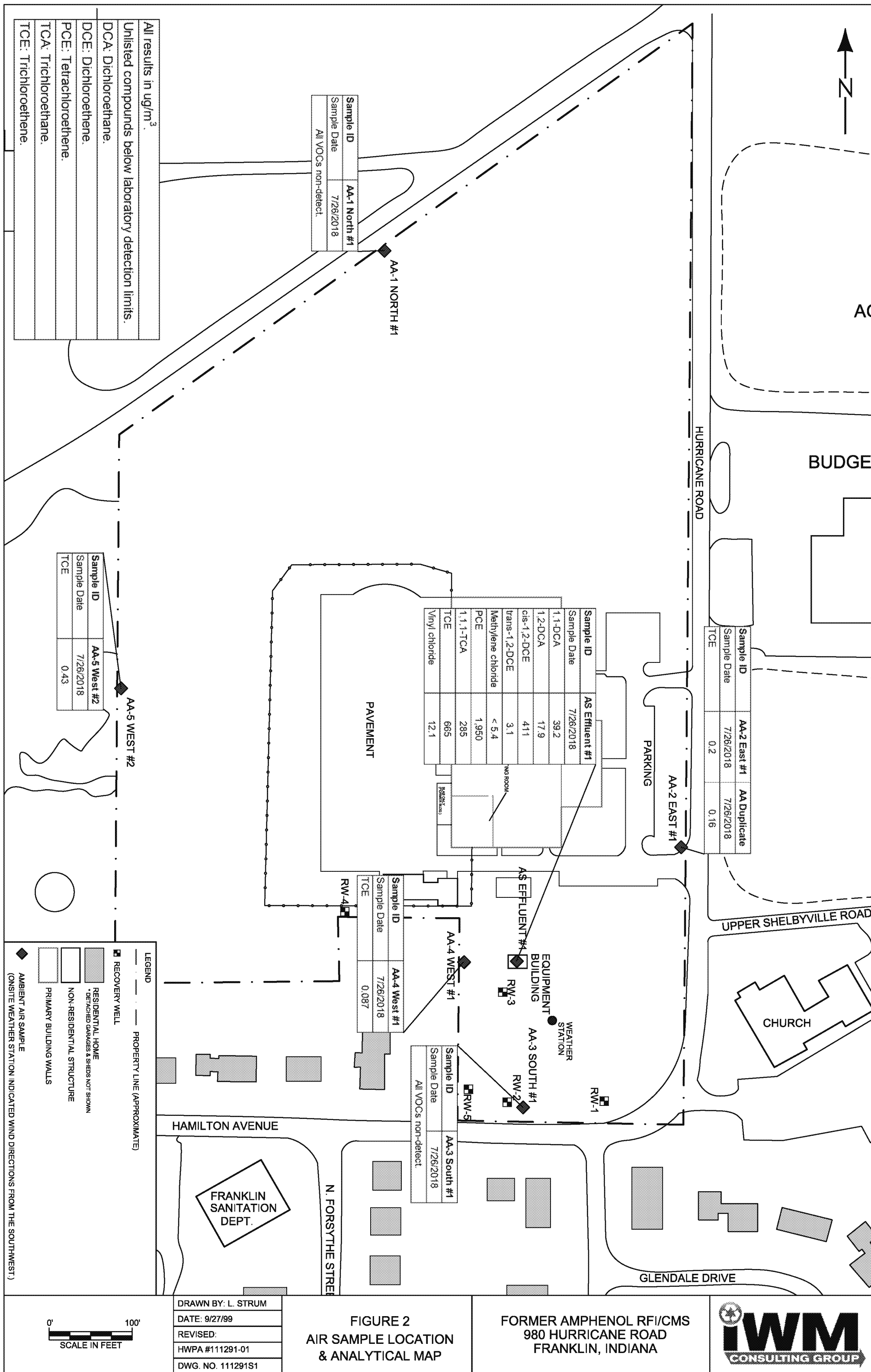
Attachments



Figures

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Attachments

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Attachment A

USEPA Letter Dated July 25, 2018

DRAFT





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 5
 77 WEST JACKSON BOULEVARD
 CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

LU-16J

Via E-mail and Certified Mail
 RETURN RECEIPT REQUESTED

July 25, 2018

Mr. Joseph M. Bianchi
 Group EHS Manager
 Amphenol Corporation
 40-60 Delaware Avenue
 Sidney, NY 13838

Subject: Franklin Power Products, Inc./Amphenol Corporation
 Request for Ambient Air Investigation
 Administrative Order on Consent, Docket # R8H-5-99-002
 EPA ID# IND 044 587 848

Dear Mr. Bianchi:

Thank you for preparing and submitting the *Ambient Air Investigation Work Plan Franklin Power Products, Inc./Amphenol Corporation*, dated July 25, 2018 ("Work Plan"). EPA appreciates the early submittal in response to our July 24, 2018 request for a work plan to investigate VOC conditions around the Amphenol Facility at 980 Hurricane Road in Franklin, Indiana. EPA conditionally approves the Work Plan with the following comments and conditions.

Comments:

- 1) Ensure that the remedial treatment system is operating normally during the sampling.
- 2 Page 2. *Proposed Sampling Procedures and Laboratory Analytical Methods*
 - EPA concurs with the flow regulator being set to a flow-rate of ~12.5 mL/minute rather than 200 mL/minute at the emissions pipe.
 - EPA assumes that the approach of installing a sampling port in the vent pipe described on page 2 would be the equivalent of placing the inlet of the

Summa canister inside the stack, in terms of reducing any dilution from ambient air.

3. Field SOP Item 3 (page 15), ambient air sample collection height:
 - The ambient sample collection height should be consistent with the height identified in the Work Plan (at 4-6 ft). The field SOP indicates collecting ambient air sample at 3-5 ft above ground.
4. Based on our conversation yesterday, Amphenol has obtained a one-liter Summa canister to collect a grab sample from the emissions pipe, or other application, as needed. We have discussed your concern about the potential for an issue with moisture during the 8-hour emissions collection.

Approval Conditions:

- 1) EPA's work plan request specified that sampling locations be determined based on prevailing wind direction on the date of the sampling. The proposed work plan identifies fixed sampling locations. Therefore, the work plan must be made flexible to ensure that sample locations account for wind direction.

For example, in the current plan, the eastern property boundary appears not to be adequately covered when wind is from the southwest, which is a typical summertime wind direction. EPA notes that the wind direction forecast for the next few days in Franklin predict wind direction to be from the southwest. In addition, based upon data from nearby airports, the trend is a southwest wind.

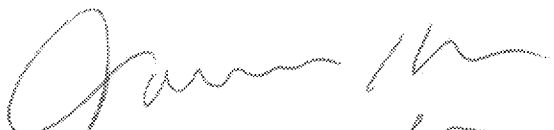
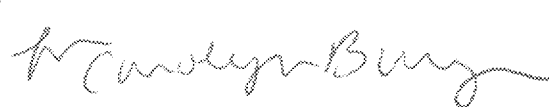
Condition One: The sampling locations must be flexible and be adjusted based upon the prevailing wind direction to ensure adequate coverage downwind of the emissions pipe.

- 2) The laboratory reporting levels for the analyte list are appropriately below the EPA screening criteria, except for TCE. The cancer risk-based screening criterion for ambient air for TCE is 0.47 ug/m³, whereas the Pace laboratory reporting limit is 0.54 ug/m³.

Condition Two: Amphenol must request that Pace meet a reporting limit of under 0.4 ug/m³, even if it must perform a SIMS method to attain this lower limit.

If you have any questions, please contact me at (312) 886-3020. Also, please feel free to contact Dr. Bhooma Sundar, EPA risk assessor, at (312) 886-1660 to assist you in the work plan development.

Sincerely,

Carolyn Bury
Project Manager
Corrective Action Section 2
Remediation and Re-use Branch

ecc: Brad Gentry, IWM Consulting Group, LLC.
Bhooma Sundar, RRB CAS2
Motria Caudill, ATSDR
Conor Neal, RRB CAS2

Attachment B

Field Log Sheet – Weather Conditions on 7/26/18

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Site Name: Former Ampheneal Facility

Weather Station Data Sheet

Date: 7/26/18

62% Humidity

Time	Temperature (F)	Wind Speed (mph)	Wind Direction	Barometric Pressure (in)
0950	76°	1-3 Avg 3	S-SW 200°	29.93 69% Hum
10:05	77°	1-3	SW-W 205°	29.93
10:21	78°	1-3	SW-W 202°	29.92 64% Hum
10:37	79°	1-3	SW 208°	29.92 63% Hum
10:52	80°	1-3	N-SW 232°	29.92 62% Hum
11:08	80°	1-4 Avg 4	W-SW 261°	29.92 59% Hum
11:25	81°	1-6 Avg 4	W-SW 235°	29.92 57% Hum
11:41	80°	1-3 Avg 4	SW 219°	29.92 64% Hum
11:54	81°	1-4 Avg 4	N 265°	29.92 62% Hum
12:14	81°	~6 mph Avg 4	W/SW 260°	29.92 58% Hum
12:28	81°	~6 mph, Avg 5	W/ 276°	29.92 58% Hum
12:43	81°	~3 mph, Avg 6	W/ 273°	29.92 59% Hum
13:01	81°	~8 mph, Avg 5	W/SW 265°	29.91 60% Hum
13:16	83°	~3 mph, Avg 5	S/SW 199°	29.91 58% Hum
13:33	82°	~7 mph, Avg 5	SW/W 219°	29.90 60% Hum
13:48	82°	~5 mph, Avg 5	S/SW, 200°	29.90 57% Hum
14:03	83°	~6 mph, Avg 4	S/SW 217°	29.90 55% Hum
14:20	82°	~1 mph, Avg 4	SW, 253°	29.90 58% Hum
14:36	83°	~4 mph, Avg 3	S, 227°	29.90 58% Hum
14:52	83°	~3 mph, Avg 4	W/SW 233°	29.89 59% Hum
15:07	83°	3 mph, Avg 3	SW 238°	29.89 61% Hum
15:23	83°	9 mph, Avg 3	S-SW 211°	29.89 58% Hum
15:38	83°	3 mph, Avg 4	SW/N = 243°	29.89 59% Hum
15:53	83°	6 mph, Avg 3	W = 270°	29.89 58% Hum
16:08	83°	3 mph, Avg 5	W/SW = 255°	29.89 60% Hum
16:23	84°	5 mph, Avg 5	W/SW = 237°	29.88 55% Hum
16:40	84°	9 mph, Avg 5	SW = 225°	29.87 57% Hum
16:55	83°	3 mph, Avg 5	SW/W = 234°	29.87 59% Hum
17:10	84°	6 mph, Avg 5	W/NW = 275°	29.87 58% Hum
17:30	83°	3 mph, Avg 3	SWW = 247°	29.86 60% Hum
17:40	80°	3 mph, Avg 5	SW/ = 225°	29.90 67% Hum
17:53	73°	2 mph, Avg 4	W/SW = 229°	29.89 76% Hum

Rained 0.15 inches of rain between ~17:37 - 17:54 0.06"/hr avg
 Wind Avg based upon 10 minute averages displayed on the weather station console

Attachment C

Wind Rose Diagram Illustrating Wind Direction and Speed

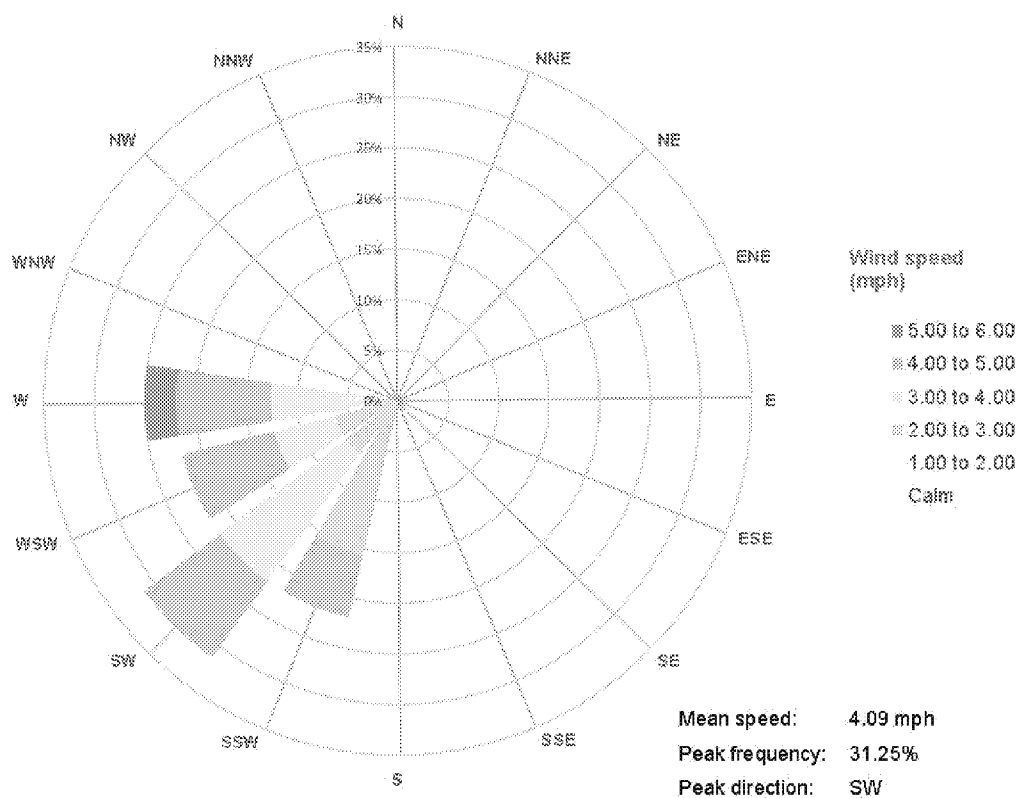
DRAFT



Wind Rose Diagram-Former Amphenol Facility

980 Hurricane Road, Franklin, IN

Data collected from onsite Vantage Pro 2 Plus Weather Station 09:40-17:53 July 26, 2018



Attachment D
Photographic Documentation

DRAFT

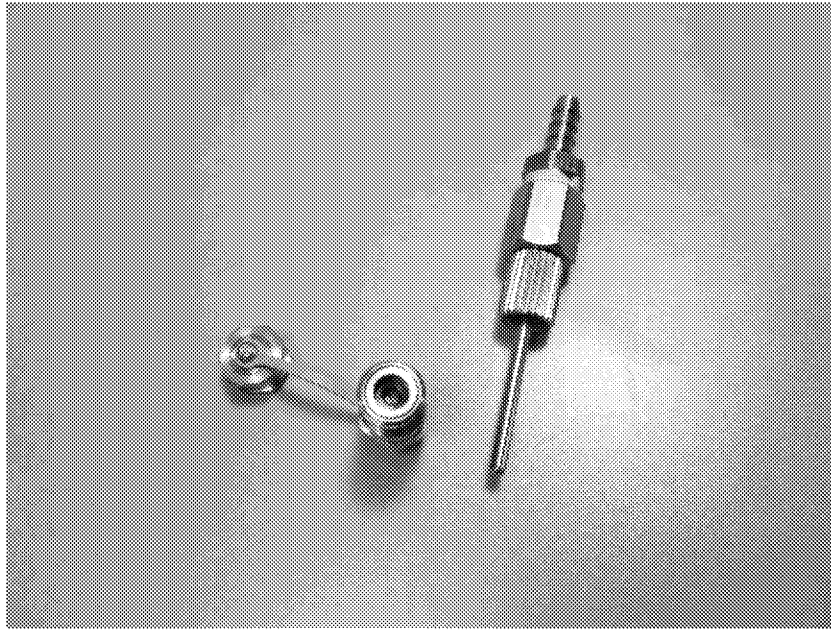


Photo #1: View of the PT-plug and sampling probe prior to assembly.

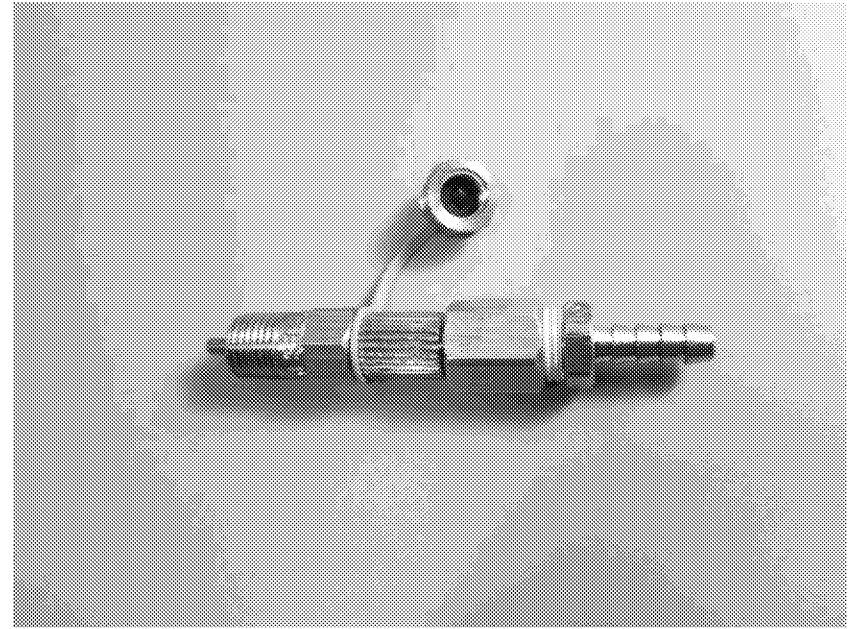


Photo #2: View of assembled PT-plug and sampling probe.

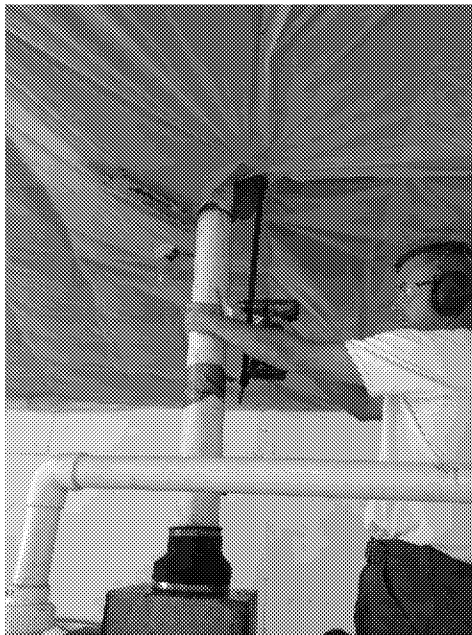


Photo #3: View of installation of the PT-plug and sampling probe into the groundwater treatment system's effluent pipe.



Photo #4: View of AS Effluent #1 inside the groundwater treatment system building.



Photo #5: View looking northwest at the weather station.



Photo #6: View looking south toward the groundwater treatment system building and exhaust pipe.



Photo #7: View looking north at AA-1 North #1.

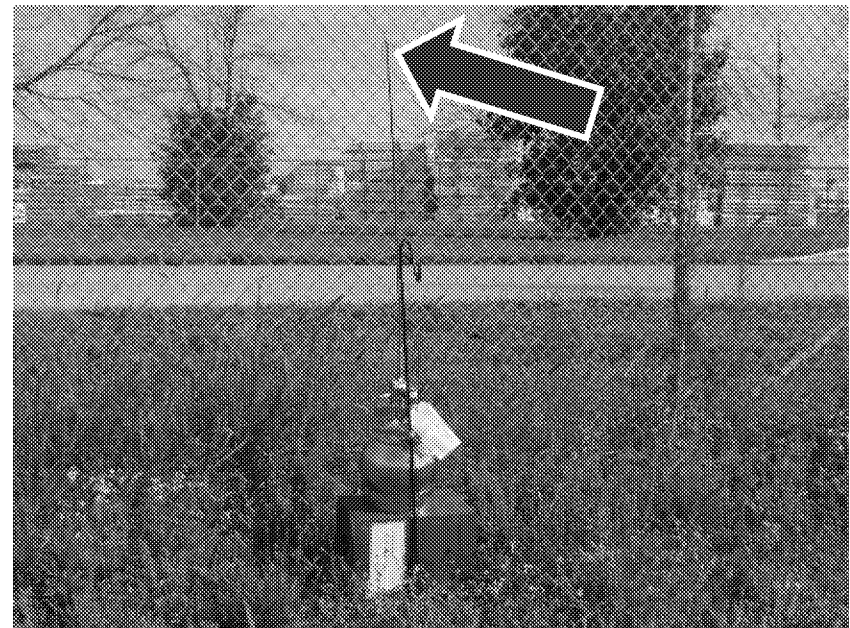


Photo #8: Close-up view of AA-1 North #1. The red arrow indicates the location of the sample intake.



Photo #9: View looking southwest at AA-2 East #1 and the duplicate sample.

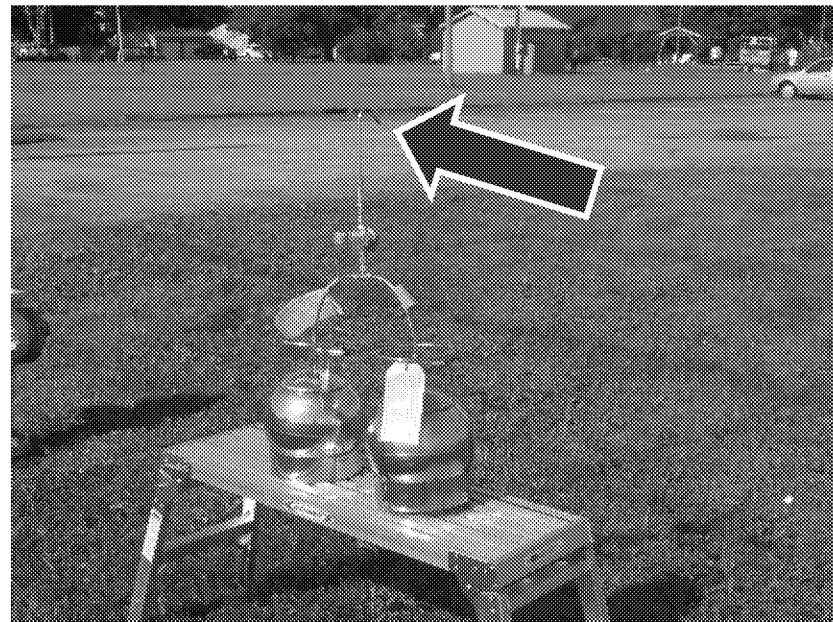


Photo #10: Close-up view of AA-2 East #1 and the duplicate sample. The red arrow indicates the location of the sample intake.



Photo #11: View looking east-southeast at AA-3 South #1.



Photo #12: Close-up view of AA-3 South #1. The red arrow indicates the location of the sample intake.



Photo #13: View looking south-southwest at AA-4 West #1.

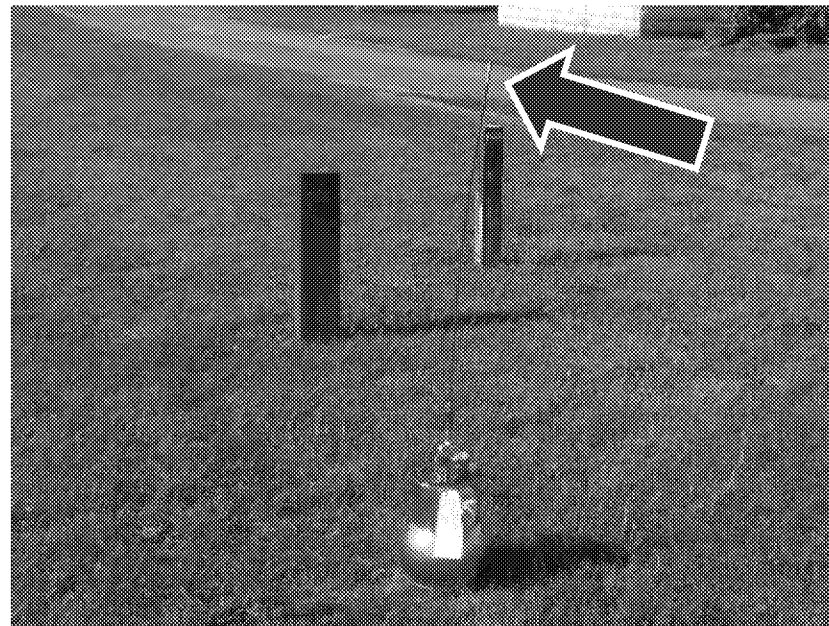


Photo #14: Close-up view of AA-4 West #1. The red arrow indicates the location of the sample intake.

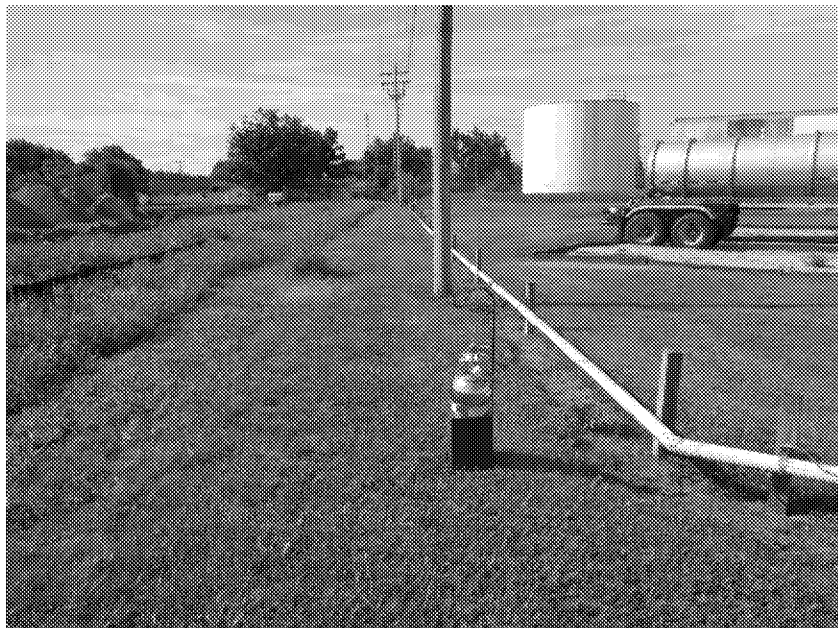


Photo #15: View looking south at AA-5 West #2.

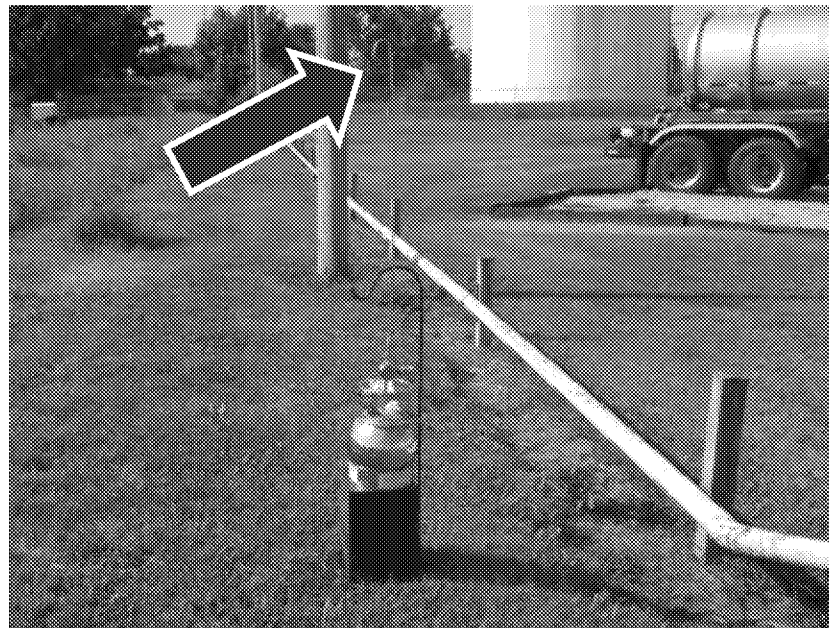


Photo #16: Close-up view of AA-5 West #2. The red arrow indicates the location of the sample intake.

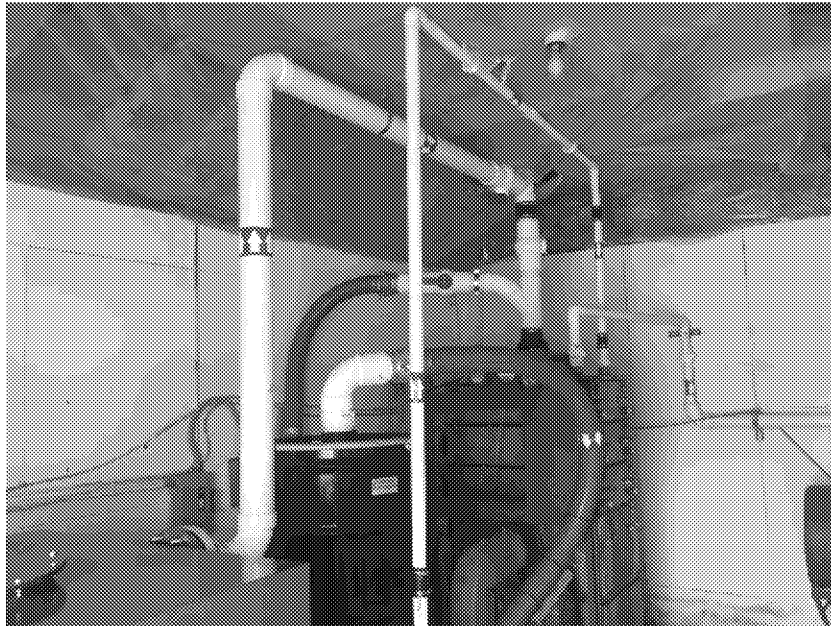


Photo #17: View of vapor treatment system.



Photo #18: View of vapor carbon unit, knockout tank, and sealed sump basin.



Photo #19: View of effluent piping from vapor carbon unit. The red arrow indicates the location of the air sampling port.

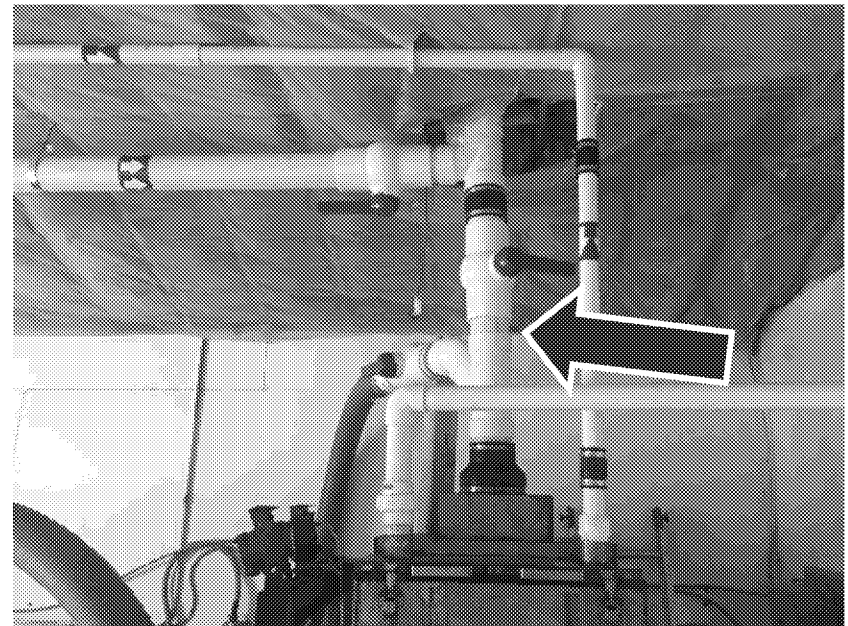


Photo #20: View of piping above the air stripper and sump discharge piping. The red arrow indicates the location of the air sampling port.

Attachment E

Air Sample Analytical Results Table

DRAFT

Preliminary Air Sampling Analytical Results
Former Amphenol Facility
EPA ID # IND 044 587 848
980 Hurricane Road
Franklin, IN 46131

EPA Regional Screening Levels ($\mu\text{g}/\text{m}^3$)				Parameters	Amphenol Air Sampling Locations ($\mu\text{g}/\text{m}^3$)						
Industrial/ Commercial		Residential		Sample Location	Ambient Air	Ambient Air	Ambient Air East	Ambient Air	Ambient Air Southwest	Ambient Air West	Air stripper
					North	East	Duplicate	South	(just west of air stripper emissions pipe)	(west central property boundary)	Effluent
Cancer	Non- cancer	Cancer	Non- Cancer	Sample ID	AA-1 North #1	AA-2 East #1	AA Duplicate	AA-3 South #1	AA-4 West #1	AA-5 West #2	AS Effluent #1
				Sample Date	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018	7/26/2018
7.7	N/A	1.8	N/A	1,1 dichloroethane	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	39.2
0.47	31	0.11	7.3	1,2 dichloroethane	<0.064	<0.064	<0.064	<0.062	<0.065	<0.065	17.9
N/A	N/A	N/A	N/A	Cis 1,2 dichloroethene	< 1.2	< 1.2	< 1.2	< 1.2	< 1.3	< 1.3	411
N/A	N/A	N/A	N/A	Trans 1,2 dichloroethene	< 1.2	< 1.2	< 1.2	< 1.2	< 1.3	< 1.3	3.1
1200	2600	100	630	Methylene chloride	< 5.5	< 5.5	< 5.5	< 5.4	< 5.6	< 5.6	< 5.4
47	180	11	42	Tetrachloroethylene (PCE)	< 1.1	< 1.1	< 1.1	< 1.0	< 1.1	< 1.1	1,950
N/A	22000	N/A	5200	1,1,1 trichloroethane	< 1.7	< 1.7	< 1.7	< 1.7	< 1.8	< 1.8	285
3	8.8	0.48	2.1	Trichlorethylene (TCE)	< 0.085	0.2U	0.16	< 0.083	0.087	0.43	665
2.8	440	0.17	100	Vinyl Chloride	<0.040	<0.040	<0.040	<0.040	<0.041	<0.041	12.1
N/A	N/A	N/A	N/A	Total VOCs	Non-detect	0.2	0.16	Non-detect	0.087	0.43	3,383.3

Notes:

All samples collected by IWM Consulting personnel and analyzed at Pace Analytical Services, LLC located in Minneapolis, MN.

All VOCs analyzed using EPA Method TO-15 except for TCE, 1,2 DCA, and Vinyl Chloride, which were analyzed using EPA Method TO-15 SIM.

All results in $\mu\text{g}/\text{m}^3$.

N/A: Not available.

IWM Consulting personnel obtained all of the air samples utilizing a 6-liter summa canister equipped with an 8-hour flow regulator (~12.5 mL/minute flow rate).

U: Reported TCE concentration is considered to be biased high since TCE was detected in the summa canister at a higher concentration ($0.48 \mu\text{g}/\text{m}^3$) prior to collection of the sample.

The parent sample for the duplicate air sample is AA-2 East #1 (980 Hurricane) and the duplicate sample confirms regulatory ambient air compliance at the eastern property line.

EPA Regional Screening Levels correspond to the published USEPA Regional Screening Levels, updated May 2018.

The onsite weather station documented a predominant wind direction originating from the southwest prior to and during the sampling activities.

Attachment F

**Pace Analytical Services, LLC
Analytical Report and Chain of Custody – July 26, 2018 Sampling Event**

DRAFT



Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

August 06, 2018

Brad Gentry
IWM Consulting Group, LLC.
7428 Rockville Road
Indianapolis, IN 46214

RE: Project: Former Amphenol Facility-Revised Report
Pace Project No.: 10441103

Dear Brad Gentry:

Enclosed are the analytical results for sample(s) received by the laboratory on July 27, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on August 6, 2018 to report vinyl chloride and 1,2-dichloroethane by TO15 SIM to attain lower reporting limits. The ending collection time for sample AA-1 North #1 (980 Hurricane) and the associated canister certification was also corrected per attached revised COC.

This report was revised on July 30, 2018 to add information to the Sample Qualifiers and Analyte Qualifiers sections. No data was modified.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carolynne Trout
carolynne.trout@pacelabs.com
1(612)607-6351
Project Manager

Enclosures

cc: Chris Newell, IWM Consulting Group



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas VWW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky VWW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina VWW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon NwTPH Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DW Certification #: 9952 C

West Virginia DEP Certification #: 382

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

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 Minneapolis, MN 55414
 (612)607-1700

SAMPLE SUMMARY

Project: Former Amphenol Facility-Revised Report
 Pace Project No.: 10441103

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10441103001	AS Effluent #1 (980 Hurricane)	Air	07/26/18 17:25	07/27/18 09:30
10441103002	AS Effluent #1 Cert# 2064	Air	07/26/18 17:25	07/27/18 09:30
10441103003	AA-1 North #1 (980 Hurricane)	Air	07/26/18 17:39	07/27/18 09:30
10441103004	AA-1 North #1 Cert# 0944	Air	07/26/18 17:39	07/27/18 09:30
10441103005	AA-2 East #1 (980 Hurricane)	Air	07/26/18 16:31	07/27/18 09:30
10441103006	AA-2 East #1 Cert# 1265	Air	07/26/18 16:31	07/27/18 09:30
10441103007	AA-3 South #1 (980 Hurricane)	Air	07/26/18 17:37	07/27/18 09:30
10441103008	AA-3 South #1 Cert# 2750	Air	07/26/18 17:37	07/27/18 09:30
10441103009	AA-4 West #1 (980 Hurricane)	Air	07/26/18 17:05	07/27/18 09:30
10441103010	AA-4 West #1 Cert# 0603	Air	07/26/18 17:05	07/27/18 09:30
10441103011	AA-5 West #2 (980 Hurricane)	Air	07/26/18 17:16	07/27/18 09:30
10441103012	AA-5 West #2 Cert# 2700	Air	07/26/18 17:16	07/27/18 09:30
10441103013	AA Duplicate (980 Hurricane)	Air	07/26/18 16:31	07/27/18 09:30
10441103014	AA Duplicate Cert# 0856	Air	07/26/18 16:31	07/27/18 09:30
10441103015	Unused Can #2103	Air		07/27/18 09:30
10441103016	Unused Can #3288	Air		07/27/18 09:30

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Minneapolis, MN 55414

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SAMPLE ANALYTE COUNT

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10441103001	AS Effluent #1 (980 Hurricane)	TO-15	MJL	8	PASI-M
		TO-15	MJL	1	PASI-M
10441103002	AS Effluent #1 Cert# 2064	TO-15	NCK	9	PASI-M
10441103003	AA-1 North #1 (980 Hurricane)	TO-15	NCK	6	PASI-M
		TO-15	NCK	3	PASI-M
10441103004	AA-1 North #1 Cert# 0944	TO-15	NCK	9	PASI-M
10441103005	AA-2 East #1 (980 Hurricane)	TO-15	NCK	6	PASI-M
		TO-15	NCK	3	PASI-M
10441103006	AA-2 East #1 Cert# 1265	TO-15	AFV	9	PASI-M
10441103007	AA-3 South #1 (980 Hurricane)	TO-15	MJL	6	PASI-M
		TO-15	MJL	3	PASI-M
10441103008	AA-3 South #1 Cert# 2750	TO-15	AFV	9	PASI-M
10441103009	AA-4 West #1 (980 Hurricane)	TO-15	MJL	6	PASI-M
		TO-15	MJL	3	PASI-M
10441103010	AA-4 West #1 Cert# 0603	TO-15	MJL	9	PASI-M
10441103011	AA-5 West #2 (980 Hurricane)	TO-15	MJL	6	PASI-M
		TO-15	MJL	3	PASI-M
10441103012	AA-5 West #2 Cert# 2700	TO-15	CH1	9	PASI-M
10441103013	AA Duplicate (980 Hurricane)	TO-15	MJL	6	PASI-M
		TO-15	MJL	3	PASI-M
10441103014	AA Duplicate Cert# 0856	TO-15	AFV	9	PASI-M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AS Effluent #1 (980 Hurricane)		Lab ID: 10441103001	Collected: 07/26/18 17:25	Received: 07/27/18 09:30	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	39.2	ug/m3	1.3	1.52		07/27/18 19:16	75-34-3	
1,2-Dichloroethane	17.9	ug/m3	0.62	1.52		07/27/18 19:16	107-06-2	
cis-1,2-Dichloroethene	411	ug/m3	36.8	45.6		07/29/18 15:37	156-59-2	
trans-1,2-Dichloroethene	3.1	ug/m3	1.2	1.52		07/27/18 19:16	156-60-5	
Methylene Chloride	ND	ug/m3	5.4	1.52		07/27/18 19:16	75-09-2	
Tetrachloroethene	1950	ug/m3	31.4	45.6		07/29/18 15:37	127-18-4	
1,1,1-Trichloroethane	285	ug/m3	50.6	45.6		07/29/18 15:37	71-55-6	
Vinyl chloride	12.1	ug/m3	0.40	1.52		07/27/18 19:16	75-01-4	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
Trichloroethene	665	ug/m3	2.5	45.6		07/29/18 15:37	79-01-6	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AS Effluent #1 Cert# 2064		Lab ID: 10441103002		Collected: 07/26/18 17:25		Received: 07/27/18 09:30		Matrix: Air	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15							
1,1-Dichloroethane		ND	ug/m3	0.82	1		07/16/18 14:39	75-34-3	
1,2-Dichloroethane		ND	ug/m3	0.41	1		07/16/18 14:39	107-06-2	4M
cis-1,2-Dichloroethene		ND	ug/m3	0.81	1		07/16/18 14:39	156-59-2	
trans-1,2-Dichloroethene		ND	ug/m3	0.81	1		07/16/18 14:39	156-60-5	
Methylene Chloride		ND	ug/m3	3.5	1		07/16/18 14:39	75-09-2	
Tetrachloroethene		ND	ug/m3	0.69	1		07/16/18 14:39	127-18-4	
1,1,1-Trichloroethane		ND	ug/m3	1.1	1		07/16/18 14:39	71-55-6	
Trichloroethene		ND	ug/m3	0.55	1		07/16/18 14:39	79-01-6	5M
Vinyl chloride		ND	ug/m3	0.26	1		07/16/18 14:39	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-1 North #1 (980 Hurricane)		Lab ID: 10441103003		Collected: 07/26/18 17:39		Received: 07/27/18 09:30		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR		Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	1.3	1.55		07/27/18 15:13	75-34-3		
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:13	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:13	156-60-5		
Methylene Chloride	ND	ug/m3	5.5	1.55		07/27/18 15:13	75-09-2		
Tetrachloroethene	ND	ug/m3	1.1	1.55		07/27/18 15:13	127-18-4		
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.55		07/27/18 15:13	71-55-6		
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15							
1,2-Dichloroethane	ND	ug/m3	0.064	1.55		07/27/18 15:13	107-06-2		
Trichloroethene	ND	ug/m3	0.085	1.55		07/27/18 15:13	79-01-6		
Vinyl chloride	ND	ug/m3	0.040	1.55		07/27/18 15:13	75-01-4		

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Minneapolis, MN 55414

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-1 North #1 Cert# 0944		Lab ID: 10441103004		Collected: 07/26/18 17:39		Received: 07/27/18 09:30		Matrix: Air	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15							
1,1-Dichloroethane		ND	ug/m3	0.82	1		06/15/18 10:22	75-34-3	
1,2-Dichloroethane		ND	ug/m3	0.41	1		06/15/18 10:22	107-06-2	4M
cis-1,2-Dichloroethene		ND	ug/m3	0.81	1		06/15/18 10:22	156-59-2	
trans-1,2-Dichloroethene		ND	ug/m3	0.81	1		06/15/18 10:22	156-60-5	
Methylene Chloride		ND	ug/m3	3.5	1		06/15/18 10:22	75-09-2	
Tetrachloroethene		ND	ug/m3	0.69	1		06/15/18 10:22	127-18-4	
1,1,1-Trichloroethane		ND	ug/m3	1.1	1		06/15/18 10:22	71-55-6	
Trichloroethene		ND	ug/m3	0.55	1		06/15/18 10:22	79-01-6	5M
Vinyl chloride		ND	ug/m3	0.26	1		06/15/18 10:22	75-01-4	3M

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Pace Analytical Services, LLC

1700 Elm Street - Suite 200

Minneapolis, MN 55414

(612)607-1700

ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-2 East #1 (980 Hurricane)		Lab ID: 10441103005		Collected: 07/26/18 16:31		Received: 07/27/18 09:30		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR		Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	1.3	1.55		07/27/18 15:48	75-34-3		
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:48	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:48	156-60-5		
Methylene Chloride	ND	ug/m3	5.5	1.55		07/27/18 15:48	75-09-2		
Tetrachloroethene	ND	ug/m3	1.1	1.55		07/27/18 15:48	127-18-4		
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.55		07/27/18 15:48	71-55-6		
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15							
1,2-Dichloroethane	ND	ug/m3	0.064	1.55		07/27/18 15:48	107-06-2		
Trichloroethene	0.20	ug/m3	0.085	1.55		07/27/18 15:48	79-01-6	1M	
Vinyl chloride	ND	ug/m3	0.040	1.55		07/27/18 15:48	75-01-4		

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-2 East #1 Cert# 1265		Lab ID: 10441103006		Collected: 07/26/18 16:31		Received: 07/27/18 09:30		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
Individual Can Certification		Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.82	1		07/05/18 13:26	75-34-3		
1,2-Dichloroethane	ND	ug/m3	0.41	1		07/05/18 13:26	107-06-2	4M	
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/05/18 13:26	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/05/18 13:26	156-60-5		
Methylene Chloride	ND	ug/m3	3.5	1		07/05/18 13:26	75-09-2		
Tetrachloroethene	ND	ug/m3	0.69	1		07/05/18 13:26	127-18-4		
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		07/05/18 13:26	71-55-6		
Trichloroethene	0.48J	ug/m3	0.55	1		07/05/18 13:26	79-01-6	2M	
Vinyl chloride	ND	ug/m3	0.26	1		07/05/18 13:26	75-01-4	3M	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-3 South #1 (980 Hurricane)		Lab ID: 10441103007		Collected: 07/26/18 17:37		Received: 07/27/18 09:30		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR		Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	1.3	1.52		07/27/18 16:23	75-34-3		
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.52		07/27/18 16:23	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.52		07/27/18 16:23	156-60-5		
Methylene Chloride	ND	ug/m3	5.4	1.52		07/27/18 16:23	75-09-2		
Tetrachloroethene	ND	ug/m3	1.0	1.52		07/27/18 16:23	127-18-4		
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.52		07/27/18 16:23	71-55-6		
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15							
1,2-Dichloroethane	ND	ug/m3	0.062	1.52		07/27/18 16:23	107-06-2		
Trichloroethene	ND	ug/m3	0.083	1.52		07/27/18 16:23	79-01-6		
Vinyl chloride	ND	ug/m3	0.040	1.52		07/27/18 16:23	75-01-4		

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-3 South #1 Cert# 2750		Lab ID: 10441103008		Collected: 07/26/18 17:37		Received: 07/27/18 09:30		Matrix: Air	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15							
1,1-Dichloroethane		ND	ug/m3	0.82	1		07/18/18 14:59	75-34-3	
1,2-Dichloroethane		ND	ug/m3	0.41	1		07/18/18 14:59	107-06-2	4M
cis-1,2-Dichloroethene		ND	ug/m3	0.81	1		07/18/18 14:59	156-59-2	
trans-1,2-Dichloroethene		ND	ug/m3	0.81	1		07/18/18 14:59	156-60-5	
Methylene Chloride		ND	ug/m3	3.5	1		07/18/18 14:59	75-09-2	
Tetrachloroethene		ND	ug/m3	0.69	1		07/18/18 14:59	127-18-4	
1,1,1-Trichloroethane		ND	ug/m3	1.1	1		07/18/18 14:59	71-55-6	
Trichloroethene		ND	ug/m3	0.55	1		07/18/18 14:59	79-01-6	5M
Vinyl chloride		ND	ug/m3	0.26	1		07/18/18 14:59	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-4 West #1 (980 Hurricane)		Lab ID: 10441103009		Collected: 07/26/18 17:05		Received: 07/27/18 09:30		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR		Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	1.3	1.58		07/27/18 16:57	75-34-3		
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 16:57	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 16:57	156-60-5		
Methylene Chloride	ND	ug/m3	5.6	1.58		07/27/18 16:57	75-09-2		
Tetrachloroethene	ND	ug/m3	1.1	1.58		07/27/18 16:57	127-18-4		
1,1,1-Trichloroethane	ND	ug/m3	1.8	1.58		07/27/18 16:57	71-55-6		
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15							
1,2-Dichloroethane	ND	ug/m3	0.065	1.58		07/27/18 16:57	107-06-2		
Trichloroethene	0.087	ug/m3	0.086	1.58		07/27/18 16:57	79-01-6		
Vinyl chloride	ND	ug/m3	0.041	1.58		07/27/18 16:57	75-01-4		

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-4 West #1 Cert# 0603		Lab ID: 10441103010		Collected: 07/26/18 17:05		Received: 07/27/18 09:30		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
Individual Can Certification		Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.82	1		06/23/18 13:24	75-34-3		
1,2-Dichloroethane	ND	ug/m3	0.41	1		06/23/18 13:24	107-06-2	4M	
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/23/18 13:24	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/23/18 13:24	156-60-5		
Methylene Chloride	ND	ug/m3	3.5	1		06/23/18 13:24	75-09-2		
Tetrachloroethene	ND	ug/m3	0.69	1		06/23/18 13:24	127-18-4		
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		06/23/18 13:24	71-55-6		
Trichloroethene	ND	ug/m3	0.55	1		06/23/18 13:24	79-01-6	5M	
Vinyl chloride	ND	ug/m3	0.26	1		06/23/18 13:24	75-01-4	3M	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-5 West #2 (980 Hurricane)		Lab ID: 10441103011		Collected: 07/26/18 17:16		Received: 07/27/18 09:30		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR		Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	1.3	1.58		07/27/18 18:07	75-34-3		
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 18:07	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 18:07	156-60-5		
Methylene Chloride	ND	ug/m3	5.6	1.58		07/27/18 18:07	75-09-2		
Tetrachloroethene	ND	ug/m3	1.1	1.58		07/27/18 18:07	127-18-4		
1,1,1-Trichloroethane	ND	ug/m3	1.8	1.58		07/27/18 18:07	71-55-6		
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15							
1,2-Dichloroethane	ND	ug/m3	0.065	1.58		07/27/18 18:07	107-06-2		
Trichloroethene	0.43	ug/m3	0.086	1.58		07/27/18 18:07	79-01-6		
Vinyl chloride	ND	ug/m3	0.041	1.58		07/27/18 18:07	75-01-4		

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-5 West #2 Cert# 2700		Lab ID: 10441103012		Collected: 07/26/18 17:16		Received: 07/27/18 09:30		Matrix: Air	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15							
1,1-Dichloroethane		ND	ug/m3	0.82	1		07/20/18 10:11	75-34-3	
1,2-Dichloroethane		ND	ug/m3	0.41	1		07/20/18 10:11	107-06-2	4M
cis-1,2-Dichloroethene		ND	ug/m3	0.81	1		07/20/18 10:11	156-59-2	
trans-1,2-Dichloroethene		ND	ug/m3	0.81	1		07/20/18 10:11	156-60-5	
Methylene Chloride		ND	ug/m3	3.5	1		07/20/18 10:11	75-09-2	
Tetrachloroethene		ND	ug/m3	0.69	1		07/20/18 10:11	127-18-4	
1,1,1-Trichloroethane		ND	ug/m3	1.1	1		07/20/18 10:11	71-55-6	
Trichloroethene		ND	ug/m3	0.55	1		07/20/18 10:11	79-01-6	5M
Vinyl chloride		ND	ug/m3	0.26	1		07/20/18 10:11	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA Duplicate (980 Hurricane)		Lab ID: 10441103013		Collected: 07/26/18 16:31		Received: 07/27/18 09:30		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
TO15 MSV AIR		Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	1.3	1.55		07/27/18 18:41	75-34-3		
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 18:41	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 18:41	156-60-5		
Methylene Chloride	ND	ug/m3	5.5	1.55		07/27/18 18:41	75-09-2		
Tetrachloroethene	ND	ug/m3	1.1	1.55		07/27/18 18:41	127-18-4		
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.55		07/27/18 18:41	71-55-6		
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15							
1,2-Dichloroethane	ND	ug/m3	0.064	1.55		07/27/18 18:41	107-06-2		
Trichloroethene	0.16	ug/m3	0.085	1.55		07/27/18 18:41	79-01-6		
Vinyl chloride	ND	ug/m3	0.040	1.55		07/27/18 18:41	75-01-4		

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA Duplicate Cert# 0856		Lab ID: 10441103014		Collected: 07/26/18 16:31		Received: 07/27/18 09:30		Matrix: Air	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15							
1,1-Dichloroethane		ND	ug/m3	0.82	1		07/18/18 14:28	75-34-3	
1,2-Dichloroethane		ND	ug/m3	0.41	1		07/18/18 14:28	107-06-2	4M
cis-1,2-Dichloroethene		ND	ug/m3	0.81	1		07/18/18 14:28	156-59-2	
trans-1,2-Dichloroethene		ND	ug/m3	0.81	1		07/18/18 14:28	156-60-5	
Methylene Chloride		ND	ug/m3	3.5	1		07/18/18 14:28	75-09-2	
Tetrachloroethene		ND	ug/m3	0.69	1		07/18/18 14:28	127-18-4	
1,1,1-Trichloroethane		ND	ug/m3	1.1	1		07/18/18 14:28	71-55-6	
Trichloroethene		ND	ug/m3	0.55	1		07/18/18 14:28	79-01-6	5M
Vinyl chloride		ND	ug/m3	0.26	1		07/18/18 14:28	75-01-4	3M

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QUALITY CONTROL DATA

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

QC Batch: 553458 Analysis Method: TO-15
 QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
 Associated Lab Samples: 10441103001, 10441103003, 10441103005, 10441103007, 10441103009, 10441103011, 10441103013

METHOD BLANK: 3007016 Matrix: Air
 Associated Lab Samples: 10441103001, 10441103003, 10441103005, 10441103007, 10441103009, 10441103011, 10441103013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	07/27/18 11:24	
1,1-Dichloroethane	ug/m3	ND	0.82	07/27/18 11:24	
1,2-Dichloroethane	ug/m3	ND	0.41	07/27/18 11:24	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	07/27/18 11:24	
Methylene Chloride	ug/m3	ND	3.5	07/27/18 11:24	
Tetrachloroethene	ug/m3	ND	0.69	07/27/18 11:24	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	07/27/18 11:24	
Vinyl chloride	ug/m3	ND	0.26	07/27/18 11:24	

LABORATORY CONTROL SAMPLE: 3007017

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	58.1	105	70-135	
1,1-Dichloroethane	ug/m3	41.1	41.2	100	70-134	
1,2-Dichloroethane	ug/m3	41.1	42.3	103	70-136	
cis-1,2-Dichloroethene	ug/m3	40.3	41.0	102	70-136	
Methylene Chloride	ug/m3	177	174	98	67-132	
Tetrachloroethene	ug/m3	68.9	74.5	108	70-133	
trans-1,2-Dichloroethene	ug/m3	40.3	45.2	112	70-132	
Vinyl chloride	ug/m3	26	25.7	99	70-141	

SAMPLE DUPLICATE: 3007019

Parameter	Units	10441103009 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	ND	ND		25	
Tetrachloroethene	ug/m3	ND	.52J		25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Vinyl chloride	ug/m3	ND	ND		25	

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QUALITY CONTROL DATA

Project: Former Amphenol Facility-Revised Report
Pace Project No.: 10441103

QC Batch: 553217 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR SIM SCAN
Associated Lab Samples: 10441103001, 10441103003, 10441103005, 10441103007, 10441103009, 10441103011, 10441103013

METHOD BLANK: 3005496 Matrix: Air
Associated Lab Samples: 10441103001, 10441103003, 10441103005, 10441103007, 10441103009, 10441103011, 10441103013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/m3	ND	0.041	07/27/18 11:24	
Trichloroethene	ug/m3	ND	0.055	07/27/18 11:24	
Vinyl chloride	ug/m3	ND	0.026	07/27/18 11:24	

LABORATORY CONTROL SAMPLE: 3005497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/m3	.41	0.38	92	61-130	
Trichloroethene	ug/m3	.55	0.57	104	58-141	
Vinyl chloride	ug/m3	.26	0.26	99	61-136	

SAMPLE DUPLICATE: 3006156

Parameter	Units	10441103009 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	0.087	.085J		25	
Vinyl chloride	ug/m3	ND	ND		25	

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QUALIFIERS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

SAMPLE QUALIFIERS

Sample: 10441103003

[1] Results confirmed by second analysis.

Sample: 10441103007

[1] Field measurement according to sampling gauge showed final pressure of -11 inHg. Laboratory return pressure indicated a final canister pressure of -3.5 inHg. Upon laboratory testing, sampling gauge confirmed to be faulty, providing inaccurate final vacuum in the field. The laboratory measurement indicates linear sample collection.

ANALYTE QUALIFIERS

1M	Detection of this analyte in the associated canister certification exceeded the MDL of 0.268 ug/m3. Result potentially bias high.
2M	The analyte was detected at or above the Method Detection Limit of 0.268 ug/m3 but below the Reporting Limit of 0.546 ug/m3. Any detection in associated samples may indicate a high bias.
3M	The analyte was not detected at or above the Method Detection Limit of 0.126 ug/m3. Any detection in associated samples below this value may indicate a high bias.
4M	The analyte was not detected at or above the Method Detection Limit of 0.15 ug/m3. Any detection in associated samples below this value may indicate a high bias.
5M	The analyte was not detected at or above the Method Detection Limit of 0.268 ug/m3. Any detection in associated samples below this value may indicate a high bias.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE


Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10441103001	AS Effluent #1 (980 Hurricane)	TO-15	553458		
10441103003	AA-1 North #1 (980 Hurricane)	TO-15	553458		
10441103005	AA-2 East #1 (980 Hurricane)	TO-15	553458		
10441103007	AA-3 South #1 (980 Hurricane)	TO-15	553458		
10441103009	AA-4 West #1 (980 Hurricane)	TO-15	553458		
10441103011	AA-5 West #2 (980 Hurricane)	TO-15	553458		
10441103013	AA Duplicate (980 Hurricane)	TO-15	553458		
10441103002	AS Effluent #1 Cert# 2064	TO-15	553191		
10441103004	AA-1 North #1 Cert# 0944	TO-15	553191		
10441103006	AA-2 East #1 Cert# 1265	TO-15	553191		
10441103008	AA-3 South #1 Cert# 2750	TO-15	553191		
10441103010	AA-4 West #1 Cert# 0603	TO-15	553191		
10441103012	AA-5 West #2 Cert# 2700	TO-15	553191		
10441103014	AA Duplicate Cert# 0856	TO-15	553191		
10441103001	AS Effluent #1 (980 Hurricane)	TO-15	553217		
10441103003	AA-1 North #1 (980 Hurricane)	TO-15	553217		
10441103005	AA-2 East #1 (980 Hurricane)	TO-15	553217		
10441103007	AA-3 South #1 (980 Hurricane)	TO-15	553217		
10441103009	AA-4 West #1 (980 Hurricane)	TO-15	553217		
10441103011	AA-5 West #2 (980 Hurricane)	TO-15	553217		
10441103013	AA Duplicate (980 Hurricane)	TO-15	553217		

REPORT OF LABORATORY ANALYSIS

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	Document Name: Air Sample Condition Upon Receipt	Document Revised: 02May2018 Page 1 of 1
	Document No.: F-MN-A-106-rev.15	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition
Upon Receipt

Client Name:

Project #:

WO#: 10441103

PM: CT1

Due Date: 07/30/18

CLIENT: IWM CONSULT

 Courier: ☒ Fed Ex ☐ UPS ☐ Speedee ☐ Client
☐ Commercial ☐ Pace ☐ Other:
Tracking Number: 7475 9834 1075, 1053, 1064Custody Seal on Cooler/Box Present? ☐ Yes ☒ NoSeals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other: _____Temp Blank rec: ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): _____ Corrected Temp (°C): _____

Thermom. Used: ☐ G87A9170600254

Temp should be above freezing to 6°C Correction Factor: _____

Date & Initials of Person Examining Contents: R6 7/27/18Type of Ice Received ☐ Blue ☐ Wet ☒ None

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7. <u>24 hr.</u>
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Media: <u>Air Can</u> Airbag Filter TDT Passive		11. Individually Certified Cans <u>Y</u> N (list which samples)
Is sufficient information available to reconcile samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12.

Samples Received: <u>8 Cans FFPT</u>					Pressure Gauge # 10AIR26				
Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
<u>EFF</u>			<u>-3.5</u>	<u>+5</u>	<u>Unsealed</u>	<u>3288</u>	<u>0922</u>	<u>-30</u>	<u>—</u>
<u>AA-1</u>			<u>-4</u>	<u>"</u>					
<u>" 2</u>			<u>-4</u>	<u>"</u>					
<u>" 3</u>			<u>-3.5</u>	<u>"</u>					
<u>" 4</u>			<u>-4.5</u>	<u>"</u>					
<u>" 5</u>			<u>-4.5</u>	<u>"</u>					
<u>Dup</u>			<u>-4</u>	<u>"</u>					
<u>Unsealed</u>	<u>2103</u>	<u>1792</u>	<u>-28</u>	<u>—</u>					

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ NoPerson Contacted: Brad GentryDate/Time: 7/27/18 emailComments/Resolution: include 1,1,DCA in the compound list

Brad was notified that can 2750/fc1033 was received at -3.5 vacuum when measured on lab equipment, as noted above. The gauge appeared to be malfunctioning in field.

Project Manager Review:

Carolynne HuntDate: 7/27/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: JRM Consulting	Address: 7428 Rockville Rd Indpls, IN 46214	Report To: B. Gentry	Copy To: Chris Newell	Attention: Same	Company Name: Same
Email To: bgentry@jrmconsulting.com	Project Name: Grog Scarpons	Project Number: 17339	Project Profile #:	Place Project Manager/Sales Rep:	Place Quote Reference:
Requested Due Date/AT: 3/17/11	Requested Due Date/AT: 24-HR	<div style="display: flex; justify-content: space-between;"> <div> <p>Section D Required Client Information</p> <p>AIR SAMPLE ID</p> <p>Sample IDs MUST BE UNIQUE</p> </div> <div> <p>Valid Media Codes</p> <p>12006</p> <p>12007</p> <p>12008</p> <p>12009</p> <p>12010</p> <p>12011</p> <p>12012</p> <p>12013</p> <p>12014</p> <p>12015</p> <p>12016</p> <p>12017</p> <p>12018</p> <p>12019</p> <p>12020</p> <p>12021</p> <p>12022</p> <p>12023</p> <p>12024</p> <p>12025</p> <p>12026</p> <p>12027</p> <p>12028</p> <p>12029</p> <p>12030</p> <p>12031</p> <p>12032</p> <p>12033</p> <p>12034</p> <p>12035</p> <p>12036</p> <p>12037</p> <p>12038</p> <p>12039</p> <p>12040</p> <p>12041</p> <p>12042</p> <p>12043</p> <p>12044</p> <p>12045</p> <p>12046</p> <p>12047</p> <p>12048</p> <p>12049</p> <p>12050</p> <p>12051</p> <p>12052</p> <p>12053</p> <p>12054</p> <p>12055</p> <p>12056</p> <p>12057</p> <p>12058</p> <p>12059</p> <p>12060</p> <p>12061</p> <p>12062</p> <p>12063</p> <p>12064</p> <p>12065</p> <p>12066</p> <p>12067</p> <p>12068</p> <p>12069</p> <p>12070</p> <p>12071</p> <p>12072</p> <p>12073</p> <p>12074</p> <p>12075</p> <p>12076</p> <p>12077</p> <p>12078</p> <p>12079</p> <p>12080</p> <p>12081</p> <p>12082</p> <p>12083</p> <p>12084</p> <p>12085</p> <p>12086</p> <p>12087</p> <p>12088</p> <p>12089</p> <p>12090</p> <p>12091</p> <p>12092</p> <p>12093</p> <p>12094</p> <p>12095</p> <p>12096</p> <p>12097</p> <p>12098</p> <p>12099</p> <p>12100</p> <p>12101</p> <p>12102</p> <p>12103</p> <p>12104</p> <p>12105</p> <p>12106</p> <p>12107</p> <p>12108</p> <p>12109</p> <p>12110</p> <p>12111</p> <p>12112</p> <p>12113</p> <p>12114</p> <p>12115</p> <p>12116</p> <p>12117</p> <p>12118</p> <p>12119</p> <p>12120</p> <p>12121</p> <p>12122</p> <p>12123</p> <p>12124</p> <p>12125</p> <p>12126</p> <p>12127</p> <p>12128</p> <p>12129</p> <p>12130</p> <p>12131</p> <p>12132</p> <p>12133</p> <p>12134</p> <p>12135</p> <p>12136</p> <p>12137</p> <p>12138</p> <p>12139</p> <p>12140</p> <p>12141</p> <p>12142</p> <p>12143</p> <p>12144</p> <p>12145</p> <p>12146</p> <p>12147</p> <p>12148</p> <p>12149</p> <p>12150</p> <p>12151</p> <p>12152</p> <p>12153</p> <p>12154</p> <p>12155</p> <p>12156</p> <p>12157</p> <p>12158</p> <p>12159</p> <p>12160</p> <p>12161</p> <p>12162</p> <p>12163</p> <p>12164</p> <p>12165</p> <p>12166</p> <p>12167</p> <p>12168</p> <p>12169</p> <p>12170</p> <p>12171</p> <p>12172</p> <p>12173</p> <p>12174</p> <p>12175</p> <p>12176</p> <p>12177</p> <p>12178</p> <p>12179</p> <p>12180</p> <p>12181</p> <p>12182</p> <p>12183</p> <p>12184</p> <p>12185</p> <p>12186</p> <p>12187</p> <p>12188</p> <p>12189</p> <p>12190</p> <p>12191</p> <p>12192</p> <p>12193</p> <p>12194</p> <p>12195</p> <p>12196</p> <p>12197</p> <p>12198</p> <p>12199</p> <p>12200</p> <p>12201</p> <p>12202</p> <p>12203</p> <p>12204</p> <p>12205</p> <p>12206</p> <p>12207</p> <p>12208</p> <p>12209</p> <p>12210</p> <p>12211</p> <p>12212</p> <p>12213</p> <p>12214</p> <p>12215</p> <p>12216</p> <p>12217</p> <p>12218</p> <p>12219</p> <p>12220</p> <p>12221</p> <p>12222</p> <p>12223</p> <p>12224</p> <p>12225</p> <p>12226</p> <p>12227</p> <p>12228</p> <p>12229</p> <p>12230</p> <p>12231</p> <p>12232</p> <p>12233</p> <p>12234</p> <p>12235</p> <p>12236</p> <p>12237</p> <p>12238</p> <p>12239</p> <p>12240</p> <p>12241</p> <p>12242</p> <p>12243</p> <p>12244</p> <p>12245</p> <p>12246</p> <p>12247</p> <p>12248</p> <p>12249</p> <p>12250</p> <p>12251</p> <p>12252</p> <p>12253</p> <p>12254</p> <p>12255</p> <p>12256</p> <p>12257</p> <p>12258</p> <p>12259</p> <p>12260</p> <p>12261</p> <p>12262</p> <p>12263</p> <p>12264</p> <p>12265</p> <p>12266</p> <p>12267</p> <p>12268</p> <p>12269</p> <p>12270</p> <p>12271</p> <p>12272</p> <p>12273</p> <p>12274</p> <p>12275</p> <p>12276</p> <p>12277</p> <p>12278</p> <p>12279</p> <p>12280</p> <p>12281</p> <p>12282</p> <p>12283</p> <p>12284</p> <p>12285</p> <p>12286</p> <p>12287</p> <p>12288</p> <p>12289</p> <p>12290</p> <p>12291</p> <p>12292</p> <p>12293</p> <p>12294</p> <p>12295</p> <p>12296</p> <p>12297</p> <p>12298</p> <p>12299</p> <p>12300</p> <p>12301</p> <p>12302</p> <p>12303</p> <p>12304</p> <p>12305</p> <p>12306</p> <p>12307</p> <p>12308</p> <p>12309</p> <p>12310</p> <p>12311</p> <p>12312</p> <p>12313</p> <p>12314</p> <p>12315</p> <p>12316</p> <p>12317</p> <p>12318</p> <p>12319</p> <p>12320</p> <p>12321</p> <p>12322</p> <p>12323</p> <p>12324</p> <p>12325</p> <p>12326</p> <p>12327</p> <p>12328</p> <p>12329</p> <p>12330</p> <p>12331</p> <p>12332</p> <p>12333</p> <p>12334</p> <p>12335</p> <p>12336</p> <p>12337</p> <p>12338</p> <p>12339</p> <p>12340</p> <p>12341</p> </div></div>			

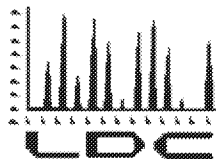
AIR: CHAIN-OF-CUSTODY

MO#: 10441103
10441103

Attachment G
LDC Data Validation Report

DRAFT



**LABORATORY DATA CONSULTANTS, INC.**

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

IWM Consulting Group
7428 Rockville Road
Indianapolis, IN 46214
ATTN: Brad Gentry

August 6, 2018

SUBJECT: REVISED Former Amphenol Facility, Data Validation

Dear Mr. Gentry,

Enclosed is the final validation report, including a revision, for the fraction listed below:

- Reason for revision: 1,2-Dichloroethane and Vinyl chloride were validated from the SIM analysis.

This SDG was received on August 1, 2018. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #42788:**SDG #**

10441103

Fraction:

Volatiles

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Ambient Air Investigation Work Plan, Franklin Power Products/Amphenol Corporation, Franklin, Indiana; July 2018
- USEPA National Functional Guidelines for Organic Superfund Methods Data Review; January 2017

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

V:\LOGIN\WM\Franklin Power Products\42788ST.wpd

LDC Report# 42788A48_RV1

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Former Amphenol Facility

LDC Report Date: August 6, 2018

Parameters: Volatiles

Validation Level: Level III & IV

Laboratory: Pace Analytical Services, LLC.

Sample Delivery Group (SDG): 10441103

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
AS Effluent #1 (980 Hurricane)**	10441103001**	Air	07/26/18
AA-1 North #1 (980 Hurricane)	10441103003	Air	07/26/18
AA-2 East #1 (980 Hurricane)#	10441103005#	Air	07/26/18
AA-3 South #1 (980 Hurricane)	10441103007	Air	07/26/18
AA-4 West #1 (980 Hurricane)	10441103009	Air	07/26/18
AA-5 West #2 (980 Hurricane)	10441103011	Air	07/26/18
AA Duplicate (980 Hurricane)	10441103013	Air	07/26/18
AA-4 West #1 (980 Hurricane)DUP	10441103009DUP	Air	07/26/18

**Indicates sample underwent Level IV validation for full scan

**¹ Indicates sample underwent Level IV validation for SIM

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Ambient Air Investigation Work Plan, Franklin Power Products/Amphenol Corporation, Franklin, Indiana (July 2018) and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) Method TO-15 and EPA Method TO-15 in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Level IV data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound for analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

The canisters were properly pressurized and handled with the following exceptions:

Sample	Final canister pressure (Field)	Final canister pressure (Laboratory)
AA-3 South #1 (980 Hurricane)	-11 "Hg	-3.5 "Hg

Although there was a discrepancy between the field and laboratory measurements of the final canister pressure, using professional judgment, associated results were not qualified. The laboratory indicated that upon testing, the sampling gauge was confirmed to be faulty, thus providing inaccurate final vacuum in the field.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 24 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, percent relative standard deviations (%RSD) were less than or equal to 30.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 40.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

Canister blank analyses were performed for every sample canister. No contaminants were found in the canister blanks with the following exceptions:

Blank ID	Analysis Date	Compound	Concentration	Associated Samples
AA-2 East #1 Cert #1265	07/05/18	Trichloroethene	0.48 ug/m ³	AA-2 East #1 (980 Hurricane)

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
AA-2 East #1 (980 Hurricane)	Trichloroethene	0.20 ug/m ³	0.20U ug/m ³

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were not required by the method.

VIII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples AA-2 East #1 (980 Hurricane)**¹ and AA Duplicate (980 Hurricane) were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound (Method)	Concentration (ug/m ³)		RPD
	AA-2 East #1 (980 Hurricane)** ¹	AA Duplicate (980 Hurricane)	
Trichloroethene (TO15-SIM)	0.20	0.16	22

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compound quantitations met validation criteria for samples which underwent Level IV validation. Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

All target compound identifications met validation criteria for samples which underwent Level IV validation. Raw data were not reviewed for Level III validation.

XIV. System Performance

The system performance was acceptable for samples which underwent Level IV validation. Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to canister blank contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the data validation all other results are considered valid and usable for all purposes.

Former Amphenol Facility
Volatiles - Data Qualification Summary - SDG 10441103

No Sample Data Qualified in this SDG

Former Amphenol Facility
Volatiles - Laboratory Blank Data Qualification Summary - SDG 10441103

Sample	Compound	Modified Final Concentration	A or P
AA-2 East #1 (980 Hurricane)**	Trichloroethene	0.20U ug/m ³	A

Former Amphenol Facility
Volatiles - Field Blank Data Qualification Summary - SDG 10441103

No Sample Data Qualified in this SDG



Pace Analytical Services, LLC

1700 Elm Street - Suite 200

Minneapolis, MN 55414

(612)607-1700

ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AS Effluent #1 (980 Hurricane) Lab ID: 10441103001 Collected: 07/26/18 17:25 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	39.2	ug/m3	1.3	1.52		07/27/18 19:16	75-34-3	
1,2-Dichloroethane	17.9	ug/m3	0.62	1.52		07/27/18 19:16	107-06-2	
cis-1,2-Dichloroethene	411	ug/m3	36.8	45.6		07/29/18 15:37	156-59-2	
trans-1,2-Dichloroethene	3.1	ug/m3	1.2	1.52		07/27/18 19:16	156-60-5	
Methylene Chloride	ND	ug/m3	5.4	1.52		07/27/18 19:16	75-09-2	
Tetrachloroethene	1950	ug/m3	31.4	45.6		07/29/18 15:37	127-18-4	
1,1,1-Trichloroethane	285	ug/m3	50.6	45.6		07/29/18 15:37	71-55-6	
Vinyl chloride	12.1	ug/m3	0.40	1.52		07/27/18 19:16	75-01-4	
TO15 MSV AIR SHM SCAN		Analytical Method: TO-15						
Trichloroethene	665	ug/m3	2.5	45.6		07/29/18 15:37	79-01-6	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report
Pace Project No.: 10441103

Sample: AA-1 North #1 (980 Hurricane)		Lab ID: 10441103003	Collected: 07/26/18 17:39		Received: 07/27/18 09:30		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.55		07/27/18 15:13	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:13	156-60-5	
Methylene Chloride	ND	ug/m3	5.5	1.55		07/27/18 15:13	75-09-2	
Tetrachloroethene	ND	ug/m3	1.1	1.55		07/27/18 15:13	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.55		07/27/18 15:13	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.064	1.55		07/27/18 15:13	107-06-2	
Trichloroethene	ND	ug/m3	0.085	1.55		07/27/18 15:13	79-01-6	
Vinyl chloride	ND	ug/m3	0.040	1.55		07/27/18 15:13	75-01-4	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-2 East #1 (980 Hurricane) Lab ID: 10441103005 Collected: 07/26/18 16:31 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.55		07/27/18 15:48	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:48	156-60-5	
Methylene Chloride	ND	ug/m3	5.5	1.55		07/27/18 15:48	75-09-2	
Tetrachloroethene	ND	ug/m3	1.1	1.55		07/27/18 15:48	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.55		07/27/18 15:48	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.064	1.55		07/27/18 15:48	107-06-2	
Trichloroethene	0.20 U	ug/m3	0.085	1.55		07/27/18 15:48	79-01-6	1M
Vinyl chloride	ND	ug/m3	0.040	1.55		07/27/18 15:48	75-01-4	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report
Pace Project No.: 10441103

Sample: AA-3 South #1 (980 Hurricane) Lab ID: 10441103007 Collected: 07/26/18 17:37 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.52		07/27/18 16:23	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.52		07/27/18 16:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.52		07/27/18 16:23	156-60-5	
Methylene Chloride	ND	ug/m3	5.4	1.52		07/27/18 16:23	75-09-2	
Tetrachloroethene	ND	ug/m3	1.0	1.52		07/27/18 16:23	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.52		07/27/18 16:23	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.062	1.52		07/27/18 16:23	107-06-2	
Trichloroethene	ND	ug/m3	0.083	1.52		07/27/18 16:23	79-01-6	
Vinyl chloride	ND	ug/m3	0.040	1.52		07/27/18 16:23	75-01-4	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-4 West #1 (980 Hurricane) Lab ID: 10441103009 Collected: 07/26/18 17:05 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.58		07/27/18 16:57	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 16:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 16:57	156-60-5	
Methylene Chloride	ND	ug/m3	5.6	1.58		07/27/18 16:57	75-09-2	
Tetrachloroethene	ND	ug/m3	1.1	1.58		07/27/18 16:57	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.8	1.58		07/27/18 16:57	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.065	1.58		07/27/18 16:57	107-06-2	
Trichloroethene	0.087	ug/m3	0.086	1.58		07/27/18 16:57	79-01-6	
Vinyl chloride	ND	ug/m3	0.041	1.58		07/27/18 16:57	75-01-4	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-5 West #2 (980 Hurricane) Lab ID: 10441103011 Collected: 07/26/18 17:16 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.58		07/27/18 18:07	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 18:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 18:07	156-60-5	
Methylene Chloride	ND	ug/m3	5.6	1.58		07/27/18 18:07	75-09-2	
Tetrachloroethene	ND	ug/m3	1.1	1.58		07/27/18 18:07	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.8	1.58		07/27/18 18:07	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.065	1.58		07/27/18 18:07	107-06-2	
Trichloroethene	0.43	ug/m3	0.086	1.58		07/27/18 18:07	79-01-6	
Vinyl chloride	ND	ug/m3	0.041	1.58		07/27/18 18:07	75-01-4	

SR 08/6/18

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA Duplicate (980 Hurricane) Lab ID: 10441103013 Collected: 07/26/18 16:31 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.55		07/27/18 18:41	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 18:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 18:41	156-60-5	
Methylene Chloride	ND	ug/m3	5.5	1.55		07/27/18 18:41	75-09-2	
Tetrachloroethene	ND	ug/m3	1.1	1.55		07/27/18 18:41	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.55		07/27/18 18:41	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.064	1.55		07/27/18 18:41	107-06-2	
Trichloroethene	0.16	ug/m3	0.085	1.55		07/27/18 18:41	79-01-6	
Vinyl chloride	ND	ug/m3	0.040	1.55		07/27/18 18:41	75-01-4	

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REPORT OF LABORATORY ANALYSIS

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LDC #: 42788A48 **VALIDATION COMPLETENESS WORKSHEET**
 SDG #: 10441103 Level III/IV
 Laboratory: Pace Analytical Services, LLC

Date: 8/1/18
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA Method TO-15) / TO-15 SIM

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	SW, A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	RSD, 12 ICV ≤ 40
IV.	Continuing calibration	A	D ≤ 30
V.	Laboratory Blanks/Canister Blanks ^{new sample}	A/SW	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates /dup	N/A	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D = 3 + 7
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	Not reviewed for Level III validation.
XIII.	Target compound identification	A	Not reviewed for Level III validation.
XIV.	System performance	A	Not reviewed for Level III validation.
XV.	Overall assessment of data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	AS Effluent #1 (980 Hurricane)**	10441103001**	Air	07/26/18
2	AA-1 North #1 (980 Hurricane) *	10441103003	Air	07/26/18
3	AA-2 East #1 (980 Hurricane) *	10441103005	Air	07/26/18
4	AA-3 South #1 (980 Hurricane) *	10441103007	Air	07/26/18
5	AA-4 West #1 (980 Hurricane) *	10441103009	Air	07/26/18
6	AA-5 West #2 (980 Hurricane) *	10441103011	Air	07/26/18
7	AA Duplicate (980 Hurricane) *	10441103013	Air	07/26/18
8	AA-4 West #1 (980 Hurricane) DUP *	10441103009DUP	Air	07/26/18
9				
10				

Notes: 1, L, RQR, PPP, E, AA, N, C - full scan A S - SIM except #1

3007016 MB				
3005496 MB SIM				

* 1, RQR, PPP, E, AA, N - full scan & L, S, C

LDC #: 4278A48

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: 2
2nd Reviewer: 4**Method:** Volatiles (EPA Method TO-15/TO-15 SIM)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	/			
Was canister pressure criteria met?	/			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 24 hour clock criteria?	/			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) < 30%?	/			
IIIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after every ICAL for each instrument?	/			
Were all percent differences (%D) < 40%?	/			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 24 hours for each instrument?	/			
Were all percent differences (%D) < 30% or percent recoveries (%R) 70-130%?	/			
V. Laboratory Blanks/Canister Blanks				
Was a laboratory blank associated with every sample in this SDG?	/			
Was a laboratory blank analyzed at least once every 24 hours for each matrix and concentration?	/			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	/	/		
Was a canister blank analyzed for every canister?	/			
Was there contamination in the canister blanks? If yes, please see the Canister Blanks validation completeness worksheet.	/			
VI. Field Blanks				
Were field blanks identified in this SDG?		/		
Were target compounds detected in the field blanks?			/	
VII. Surrogate spikes (Optional)				
Were all surrogate percent recoveries (%R) within QC limits?			/	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			/	
VIII. Laboratory Duplicate				
Was a laboratory duplicate analyzed for this SDG?	/			
Were the relative percent differences (RPD) within the QC limits?	/			

LDC #: 42788 A48

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: AE
2nd Reviewer: AE

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per analytical batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	/			
Were target compounds detected in the field duplicates?	/			
XI. Internal standards				
Were internal standard area counts within $\pm 40\%$ from the associated calibration standard?	/			
Were retention times within ± 20.0 seconds from the associated calibration standard?	/			
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and RLs adjusted to reflect all sample dilutions applicable to level IV validation?	/			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO. 1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 4278248

VALIDATION FINDINGS WORKSHEET Canister Check Blanks

Page: 1 of 1Reviewer: PC2nd Reviewer: PC

METHOD: GC/MS VOA (EPA TO-15)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

☒ N N/A Was there contamination in the canister blanks? If yes, please see the qualifications below.
Blank analysis date: 7/5/18Conc. units: ug/m3Associated Samples: 3

Compound	Canister ID	Sample Identification							
AA-2 East #1 (can # 1265*			3**						
S	0.48		0.20						

Blank analysis date: _____

Conc. units: _____

* full scan
** SIM
text

Associated Samples: _____

Compound	Canister ID	Sample Identification							

Blank analysis date: _____

Conc. units: _____

Associated Samples: _____

Compound	Canister ID	Sample Identification							

LDC #: 4278A-48

VALIDATION FINDINGS WORKSHEET Field Duplicates

Page: 1 of 1Reviewer: SR2nd reviewer: SR

METHOD: GC/MS VOA (EPA Method TO-15) /SM

Y N N/A
Y N N/A

Were field duplicate pairs identified in this SDG?

Were target compounds detected in the field duplicate pairs?

Compound	Concentration ($\mu\text{g}/\text{m}^3$)		RPD	Qualification
	3	7		
S	0.20	0.16	22	

Compound	Concentration ()		RPD	Qualification

Compound	Concentration ()		RPD	Qualification

LDC #: 42788A48

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of compound,

C_x = Concentration of compound,

S = Standard deviation of the RRFs

X = Mean of the RRFs

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (1.0 std)	RRF (1.0 std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	KAL		C (1st internal standard)	0.31515	0.31515	0.28040	0.28040	13.92455	13.92484
			AA (2nd internal standard)	0.65988	0.65988	0.61005	0.61005	8.94723	8.94729
			(3rd internal standard)						
2			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
3			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
4			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC#: 42788A48

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
 Reviewer: X
 2nd Reviewer: 9

Method: GC/MS VOA (EPA Method TO-15 SIM)

Calibration Date	GCMS	Compound	Standard	(X) Response ratio	(Y) Concentration ratio
7/25/2018	10AIRB	Trichloroethene	1	0.00022	0.001
			2	0.00036	0.001
			3	0.00074	0.002
			4	0.00179	0.01
			5	0.00362	0.01
			6	0.00711	0.02
			7	0.01055	0.03

Regression Output

	<i>Calculated</i>	<i>Reported</i>
Constant	0.00004	0.00004
R Squared	0.9999129	0.99991
X Coefficient(s)	0.3515	0.3515
Correlation Coefficient	0.9999564	
Coefficient of Determination (r ²)	0.9999129	0.99991

LDC #: 42788A48

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1Reviewer: n2nd Reviewer: Q

METHOD: GC/MS VOA (EPA TO-15)/SIM

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$$

Where: ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

A_x = Area of compound,C_x = Concentration of compound,A_{is} = Area of associated internal standardC_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported	Recalculated	Reported	Recalculated
					RRF (CC)	RRF (CC)	%D	%D
1	20804	7/27/18	C (1st internal standard)	0.28040	0.27731	0.27731	1.10285	1.10361
			AA (2nd internal standard)	0.61005	0.65961	0.65961	8.12436	8.12392
			(3rd internal standard)					
2	20802	7/27/18	S (1st internal standard)	0.10000	0.10394	0.10404	3.93759	4.03654
	SIM		(2nd internal standard)					
			(3rd internal standard)					
3	21005	7/29/18	C (1st internal standard)	0.28040	0.29206	0.29206	4.15962	4.15882
			AA (2nd internal standard)	0.61005	0.69331	0.69331	13.64883	13.64837
			(3rd internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.



Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Former Amphenol Facility-Revised Report
Pace Project No.: 10441103

QC Batch: 553217 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR SIM SCAN
Associated Lab Samples: 10441103001, 10441103003, 10441103005, 10441103007, 10441103009, 10441103011, 10441103013

METHOD BLANK: 3005496 Matrix: Air
Associated Lab Samples: 10441103001, 10441103003, 10441103005, 10441103007, 10441103009, 10441103011, 10441103013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/m3	ND	0.041	07/27/18 11:24	
Trichloroethene	ug/m3	ND	0.055	07/27/18 11:24	
Vinyl chloride	ug/m3	ND	0.026	07/27/18 11:24	

LABORATORY CONTROL SAMPLE: 3005497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/m3	.41	0.38	92	61-130	
Trichloroethene	ug/m3	.55	0.57	104	58-141	
Vinyl chloride	ug/m3	.26	0.26	99	61-136	

SAMPLE DUPLICATE: 3006156

Parameter	Units	10441103009 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	0.087	.085J		25	
Vinyl chloride	ug/m3	ND	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Former Amphenol Facility-Revised Report
Pace Project No.: 10441103

QC Batch: 553217 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR SIM SCAN
Associated Lab Samples: 10441103001, 10441103003, 10441103005, 10441103007, 10441103009, 10441103011, 10441103013

METHOD BLANK: 3005496 Matrix: Air
Associated Lab Samples: 10441103001, 10441103003, 10441103005, 10441103007, 10441103009, 10441103011, 10441103013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/m3	ND	0.041	07/27/18 11:24	0.005 0.02 x2
Trichloroethene	ug/m3	ND	0.055	07/27/18 11:24	0.027 x2
Vinyl chloride	ug/m3	ND	0.026	07/27/18 11:24	0.005 0.01 x2

LABORATORY CONTROL SAMPLE: 3005497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/m3	.41	0.38	92	61-130	
Trichloroethene	ug/m3	.55	0.57	104	58-141	
Vinyl chloride	ug/m3	.26	0.26	99	61-136	

SAMPLE DUPLICATE: 3006156

Parameter	Units	10441103009 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	0.087	.085J		25	
Vinyl chloride	ug/m3	ND	ND		25	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AS Effluent #1 Cert# 2064		Lab ID: 10441103002	Collected: 07/26/18 17:25	Received: 07/27/18 09:30	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1	0.15	07/16/18 14:39	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		07/16/18 14:39	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/16/18 14:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/16/18 14:39	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		07/16/18 14:39	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		07/16/18 14:39	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1	0.268	07/16/18 14:39	71-55-6	
Trichloroethene	ND	ug/m3	0.55	1		07/16/18 14:39	79-01-6	5M
Vinyl chloride	ND	ug/m3	0.26	1	0.126	07/16/18 14:39	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-1 North #1 Cert# 0944		Lab ID: 10441103004	Collected: 07/26/18 17:39	Received: 07/27/18 09:30	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		06/15/18 10:22	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		06/15/18 10:22	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/15/18 10:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/15/18 10:22	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		06/15/18 10:22	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		06/15/18 10:22	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		06/15/18 10:22	71-55-6	
Trichloroethene	ND	ug/m3	0.55	1		06/15/18 10:22	79-01-6	5M
Vinyl chloride	ND	ug/m3	0.26	1		06/15/18 10:22	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-2 East #1 Cert# 1265		Lab ID: 10441103006	Collected: 07/26/18 16:31	Received: 07/27/18 09:30	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		07/05/18 13:26	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		07/05/18 13:26	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/05/18 13:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/05/18 13:26	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		07/05/18 13:26	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		07/05/18 13:26	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		07/05/18 13:26	71-55-6	
Trichloroethene	0.48J	ug/m3	0.55	1		07/05/18 13:26	79-01-6	2M
Vinyl chloride	ND	ug/m3	0.26	1		07/05/18 13:26	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-3 South #1 Cert# 2750		Lab ID: 10441103008	Collected: 07/26/18 17:37	Received: 07/27/18 09:30	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		07/18/18 14:59	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		07/18/18 14:59	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/18/18 14:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/18/18 14:59	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		07/18/18 14:59	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		07/18/18 14:59	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		07/18/18 14:59	71-55-6	
Trichloroethene	ND	ug/m3	0.55	1		07/18/18 14:59	79-01-6	5M
Vinyl chloride	ND	ug/m3	0.26	1		07/18/18 14:59	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-4 West #1 Cert# 0603		Lab ID: 10441103010	Collected: 07/26/18 17:05	Received: 07/27/18 09:30	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		06/23/18 13:24	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		06/23/18 13:24	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/23/18 13:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/23/18 13:24	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		06/23/18 13:24	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		06/23/18 13:24	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		06/23/18 13:24	71-55-6	
Trichloroethene	ND	ug/m3	0.55	1		06/23/18 13:24	79-01-6	5M
Vinyl chloride	ND	ug/m3	0.26	1		06/23/18 13:24	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-5 West #2 Cert# 2700 Lab ID: 10441103012 Collected: 07/26/18 17:16 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		07/20/18 10:11	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		07/20/18 10:11	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/20/18 10:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/20/18 10:11	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		07/20/18 10:11	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		07/20/18 10:11	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		07/20/18 10:11	71-55-6	
Trichloroethene	ND	ug/m3	0.55	1		07/20/18 10:11	79-01-6	5M
Vinyl chloride	ND	ug/m3	0.26	1		07/20/18 10:11	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA Duplicate Cert# 0856		Lab ID: 10441103014	Collected: 07/26/18 16:31	Received: 07/27/18 09:30	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		07/18/18 14:28	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		07/18/18 14:28	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/18/18 14:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/18/18 14:28	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		07/18/18 14:28	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		07/18/18 14:28	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		07/18/18 14:28	71-55-6	
Trichloroethene	ND	ug/m3	0.55	1		07/18/18 14:28	79-01-6	5M
Vinyl chloride	ND	ug/m3	0.26	1		07/18/18 14:28	75-01-4	3M

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

SAMPLE QUALIFIERS

Sample: 10441103003

[1] Results confirmed by second analysis.

Sample: 10441103007

[1] Field measurement according to sampling gauge showed final pressure of -11 inHg. Laboratory return pressure indicated a final canister pressure of -3.5 inHg. Upon laboratory testing, sampling gauge confirmed to be faulty, providing inaccurate final vacuum in the field. The laboratory measurement indicates linear sample collection.

ANALYTE QUALIFIERS

1M Detection of this analyte in the associated canister certification exceeded the MDL of 0.268 ug/m3. Result potentially bias high.

2M The analyte was detected at or above the Method Detection Limit of 0.268 ug/m3 but below the Reporting Limit of 0.546 ug/m3. Any detection in associated samples may indicate a high bias.

3M The analyte was not detected at or above the Method Detection Limit of 0.126 ug/m3. Any detection in associated samples below this value may indicate a high bias.

4M The analyte was not detected at or above the Method Detection Limit of 0.15 ug/m3. Any detection in associated samples below this value may indicate a high bias.

5M The analyte was not detected at or above the Method Detection Limit of 0.268 ug/m3. Any detection in associated samples below this value may indicate a high bias.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Former Amphenol Facility-Revised Report
 Pace Project No.: 10441103

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10441103001	AS Effluent #1 (980 Hurricane)	TO-15	553458		
10441103003	AA-1 North #1 (980 Hurricane)	TO-15	553458		
10441103005	AA-2 East #1 (980 Hurricane)	TO-15	553458		
10441103007	AA-3 South #1 (980 Hurricane)	TO-15	553458		
10441103009	AA-4 West #1 (980 Hurricane)	TO-15	553458		
10441103011	AA-5 West #2 (980 Hurricane)	TO-15	553458		
10441103013	AA Duplicate (980 Hurricane)	TO-15	553458		
10441103002	AS Effluent #1 Cert# 2064	TO-15	553191		
10441103004	AA-1 North #1 Cert# 0944	TO-15	553191		
10441103006	AA-2 East #1 Cert# 1265	TO-15	553191		
10441103008	AA-3 South #1 Cert# 2750	TO-15	553191		
10441103010	AA-4 West #1 Cert# 0603	TO-15	553191		
10441103012	AA-5 West #2 Cert# 2700	TO-15	553191		
10441103014	AA Duplicate Cert# 0856	TO-15	553191		
10441103001	AS Effluent #1 (980 Hurricane)	TO-15	553217		
10441103003	AA-1 North #1 (980 Hurricane)	TO-15	553217		
10441103005	AA-2 East #1 (980 Hurricane)	TO-15	553217		
10441103007	AA-3 South #1 (980 Hurricane)	TO-15	553217		
10441103009	AA-4 West #1 (980 Hurricane)	TO-15	553217		
10441103011	AA-5 West #2 (980 Hurricane)	TO-15	553217		
10441103013	AA Duplicate (980 Hurricane)	TO-15	553217		

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AIR: CHAIN-OF-CUSTODY

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant

WO#: 10441103



27829


Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Program	
Company: <u>Iwm Consulting</u>		Report To: <u>B. Gentry</u>		Attention: <u>SAME</u>		<input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act <input type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> Other	
Address: <u>7428 Rockville Rd</u>		Copy To: <u>Chris Newell</u>		Company Name:		<input type="checkbox"/> Reporting Units Location of Sampling by State: <u>IN</u> <input checked="" type="checkbox"/> ug/m ³ <input type="checkbox"/> mg/m ³ <input type="checkbox"/> PPMV <input type="checkbox"/> PPMV	
Indpls, IN 46214		Purchase Order No.:		Address:		Report Level: <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III <input checked="" type="checkbox"/> IV <input type="checkbox"/> Other	
Email To: <u>bgentry@iwmconsult.com</u>		Project Name: <u>Former Amphenol Facility</u>		Pace Quote Reference: <u>Amphenol</u>		Reporting Units: <input checked="" type="checkbox"/> ug/m ³ <input type="checkbox"/> mg/m ³ <input type="checkbox"/> PPMV <input type="checkbox"/> PPMV	
Phone: <u>317 347 1111</u> Fax:		Project Number:		Pace Project Manager/Sales Rep. <u>Carolynne Trent/Marian Hensley</u>		Other:	
Requested Due Date/TAT: <u>24-HR</u>				Pace Profile #:			

ITEM #	Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	Valid Media Codes MEDIA CODE Tedlar Bag TS 1 Liter Summa Can 1LC 5 Liter Summa Can 5LC Low Volume Puff LVP High Volume Puff HVP Other PM10	MEDIA CODE	PID Reading (Client only)	COLLECTED				Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method:								Pace Lab ID	
					COMPOSITE START EMV/CIRAB		COMPOSITE -						PM10	3C - Fixed Gas (%)	TO-9	TO-11 (Methane)	TO-11 (PCBs)	TO-13 (PAH)	TO-14	TO-15		TO-15 Short List
					DATE	TIME	DATE	TIME														
1	AS Effluent #1 (980 Hurricane)	6LC	-	7/26/18	09:37	7/26/18	17:35	-29"	-3"	2064	0372									X	01, 02	
2	AA-1 North #1 (980 Hurricane)	6LC	-	7/26/18	09:43	7/26/18	15:39	-30"	-3"	0944	1794									X	03, 04	
3	AA-2 East #1 (980 Hurricane)	6LC	-	7/26/18	09:40	7/26/18	16:31	-30"	-3"	1265	0145									X	05, 06	
4	AA-3 South #1 (980 Hurricane)	6LC	-	7/26/18	09:37	7/26/18	17:37	-30"	-11"	2750	1033									X	07, 08	
5	AA-4 West #1 (980 Hurricane)	6LC	-	7/26/18	09:38	7/26/18	17:05	-29"	-25"	0603	0115									X	09, 010	
6	AA-5 West #2 (980 Hurricane)	6LC	-	7/26/18	09:46	7/26/18	17:16	-30"	-3"	2700	1275									X	011, 012	
7	AA Duplicate (980 Hurricane)	6LC	-	7/26/18	09:40	7/26/18	16:31	-30"	-3"	0856	0145									X	013, 014	
8																						
9																						
10																						
11																						
12																						

Comments:		RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS			
① Short list includes: ② Run TCE via TO-15 SEM		Brad Gentry/IWM		7/26/18	18:15	Eric Paw		7/27/18	9:30				
Vinyl Chloride													
Trans 1,2 DCE													
cis 1,2 DCE													
1,2 DCA													
methylene chloride													
1,1,1 TCA													
TCE													
PCE													

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
PRINT Name of SAMPLER:	Brad Gentry/Chris Newell				
SIGNATURE of SAMPLER:	<u>[Signature]</u>				
DATE Signed (MM/DD/YY)	07/26/18				

	Document Name: Air Sample Condition Upon Receipt	Document Revised: 02May2018 Page 1 of 1
	Document No.: F-MN-A-106-rev.15	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition
Upon Receipt

Client Name:

Project #:

WO#: 10441103

PM: CT1

Due Date: 07/30/18

CLIENT: IWM CONSULT

 Courier: ☒ Fed Ex ☐ UPS ☐ Speedee ☐ Client
☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 7475 9834 1075, 1053, 1064

 Custody Seal on Cooler/Box Present? ☐ Yes ☒ No
 Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

 Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other:
Temp Blank rec: ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): Corrected Temp (°C):

Thermom. Used:

Temp should be above freezing to 6°C Correction Factor:

Date & Initials of Person Examining Contents:

Type of ice Received ☐ Blue ☐ Wet ☒ None
☐ G87A9170600254
☒ G87A9158100842

R6/1/27/18

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7. 24 hr.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Media: <u>Air Can</u> Airbag Filter TDT Passive		11. Individually Certified Cans <u>Y</u> N (list which samples)
Is sufficient information available to reconcile samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12.

Samples Received: 8 Cans FFPT					Pressure Gauge # 10AIR26				
Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
EFF			-3.5	+5	Unsealed	3288	0922	-30	-
AA-1			-4	"					
" 2			-4	"					
" 3			-3.5	"					
" 4			-4.5	"					
" 5			-4.5	"					
PUP			-4	"					
Unsealed	2103	1792	-28	-					

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Brad Gentry

Date/Time: 7/27/18 email

Comments/Resolution: include 1,1,DCA in the compound list

Brad was notified that can 2750/fc1033 was received at -3.5 vacuum when measured on lab equipment, as noted above. The gauge appeared to be malfunctioning in field.

Project Manager Review:

Date: 7/27/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



AIR: CHAIN-OF-CUSTODY

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant

WO#: 10441103



10441103

27829

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Program	
Company: <u>IWM Consulting</u>		Report To: <u>B. Gentry</u>		Attention: <u>SAME</u>		<input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act <input type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input checked="" type="checkbox"/> Other	
Address: <u>7428 Rockville Rd</u>		Copy To: <u>Chris Newell</u>		Company Name:		Location of Sampling by State: <u>IN</u>	
<u>Indpls, IN 46214</u>		<u>Greg Scarponi</u>		Address:		Reporting Units: ug/m ³ <input type="checkbox"/> mg/m ³ <input type="checkbox"/> PPMV <input type="checkbox"/> PPMV <input type="checkbox"/> Other: <input type="checkbox"/>	
Email To: <u>bgentry@iwmconsult.com</u>		Purchase Order No.:		Pace Quote Reference: <u>Amphenol</u>		Report Level: <input type="checkbox"/> II <input type="checkbox"/> III <input checked="" type="checkbox"/> IV <input type="checkbox"/> Other	
Phone: <u>317 347 1111</u> Fax:		Project Name: <u>Former Amphenol Facility</u>		Pace Project Manager/Sales Rep. <u>Carolanne Trent / Marian Hensley</u>			
Requested Due Date/TAT: <u>24-HR</u>		Project Number:		Pace Profile #:			

ITEM #	Section D Required Client Information AIR SAMPLE ID Sample IDs MUST BE UNIQUE	Valid Media Codes MEDIA CODE Tedlar Bag TB 1 Liter Summa Can 1LC 6 Liter Summa Can 6LC Low Volume Puff LVP High Volume Puff HVP Other PM10	MEDIA CODE	PID Reading (Client only)	COLLECTED				Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Method:								Page Lab ID
					COMPOSITE START END/GRAB		COMPOSITE						PM10	30-Fixed Gas (%)	TO-9	TO-15M (Methane)	TO-15 (PCBs)	TO-15 (PAH)	TO-15	TO-15 Short List	
					DATE	TIME	DATE	TIME													
1	AS Effluent #1 (980 Hurricane)	6LC	-	7/26/18 09:37	7/26/18 17:25	29"	-3"	20640372										X	001,002		
2	AA-1 North #1 (980 Hurricane)	6LC	-	7/26/18 09:43	7/26/18 15:39	30"	-3"	09441794											X	003,004	
3	AA-2 East #1 (980 Hurricane)	6LC	-	7/26/18 09:40	7/26/18 16:31	30"	-3"	12650145											X	005,006	
4	AA-3 South #1 (980 Hurricane)	6LC	-	7/26/18 09:37	7/26/18 17:37	30"	-11"	27501033											X	007,008	
5	AA-4 West #1 (980 Hurricane)	6LC	-	7/26/18 09:38	7/26/18 17:05	29"	-25"	06030115											X	009,010	
6	AA-5 West #2 (980 Hurricane)	6LC	-	7/26/18 09:46	7/26/18 17:16	30"	-3"	27001275											X	011,012	
7	AA Duplicate (980 Hurricane)	6LC	-	7/26/18 09:40	7/26/18 16:31	30"	-3"	08560145											X	013,014	
8																					
9																					
10																					
11																					
12																					

Comments: ① Short list includes: Vinyl chloride Trans 1,2 DCE cis 1,2 DCE 1,2 DCA methylene chloride 1,1,1 TCA TCE PCE ② Run TCE via TO-15 SIM ③ Verify + record all pressures of canisters upon receipt at the lab. ORIGINAL	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Brad Gentry / IWM	7/26/18	18:15	Eric Paw	7/27/18	930	<input checked="" type="checkbox"/> YIN <input checked="" type="checkbox"/> YIN <input checked="" type="checkbox"/> YIN <input type="checkbox"/> YIN <input type="checkbox"/> YIN <input type="checkbox"/> YIN <input type="checkbox"/> YIN <input type="checkbox"/> YIN <input type="checkbox"/> YIN <input type="checkbox"/> YIN <input type="checkbox"/> YIN <input type="checkbox"/> YIN
	SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <u>Brad Gentry / Chris Newell</u> SIGNATURE of SAMPLER: <u>[Signature]</u> DATE Signed (MM/DD/YYYY): <u>07/26/18</u>						Temp in °C Received on Ice Custody Sealed Cooler Samples Intact



Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

August 06, 2018

Brad Gentry
IWM Consulting Group, LLC.
7428 Rockville Road
Indianapolis, IN 46214

RE: Project: Former Amphenol Facility-Revised Report
Pace Project No.: 10441103

Dear Brad Gentry:

Enclosed are the analytical results for sample(s) received by the laboratory on July 27, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on July 30, 2018 to add information to the Sample Qualifiers and Analyte Qualifiers sections. No data was modified.

This report was revised on August 6, 2018 to report vinyl chloride and 1,2-dichloroethane by TO15 SIM to attain lower reporting limits. The ending collection time for sample AA-1 North #1 (980 Hurricane) was also corrected per attached revised COC.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carolynne Trout

Carolynne Trout
carolynne.trout@pacelabs.com
1(612)607-6351
Project Manager

Enclosures

cc: Chris Newell, IWM Consulting Group



REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200

Minneapolis, MN 55414

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CERTIFICATIONS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

CNMI Saipan Certification #: MP0003

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8+Wyoming DW Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

Guam EPA Certification #: MN00064

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: 03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Massachusetts Certification #: M-MN064

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Certification #: via MN 027-053-137

Minnesota Petrofund Certification #: 1240

Mississippi Certification #: MN00064

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon NwTPH Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DW Certification #: 9952 C

West Virginia DEP Certification #: 382

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10441103001	AS Effluent #1 (980 Hurricane)	Air	07/26/18 17:25	07/27/18 09:30
10441103002	AS Effluent #1 Cert# 2064	Air	07/26/18 17:25	07/27/18 09:30
10441103003	AA-1 North #1 (980 Hurricane)	Air	07/26/18 17:39	07/27/18 09:30
10441103004	AA-1 North #1 Cert# 0944	Air	07/26/18 15:39	07/27/18 09:30
10441103005	AA-2 East #1 (980 Hurricane)	Air	07/26/18 16:31	07/27/18 09:30
10441103006	AA-2 East #1 Cert# 1265	Air	07/26/18 16:31	07/27/18 09:30
10441103007	AA-3 South #1 (980 Hurricane)	Air	07/26/18 17:37	07/27/18 09:30
10441103008	AA-3 South #1 Cert# 2750	Air	07/26/18 17:37	07/27/18 09:30
10441103009	AA-4 West #1 (980 Hurricane)	Air	07/26/18 17:05	07/27/18 09:30
10441103010	AA-4 West #1 Cert# 0603	Air	07/26/18 17:05	07/27/18 09:30
10441103011	AA-5 West #2 (980 Hurricane)	Air	07/26/18 17:16	07/27/18 09:30
10441103012	AA-5 West #2 Cert# 2700	Air	07/26/18 17:16	07/27/18 09:30
10441103013	AA Duplicate (980 Hurricane)	Air	07/26/18 16:31	07/27/18 09:30
10441103014	AA Duplicate Cert# 0856	Air	07/26/18 16:31	07/27/18 09:30
10441103015	Unused Can #2103	Air		07/27/18 09:30
10441103016	Unused Can #3288	Air		07/27/18 09:30

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SAMPLE ANALYTE COUNT

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10441103001	AS Effluent #1 (980 Hurricane)	TO-15	MJL	8	PASI-M
		TO-15	MJL	1	PASI-M
10441103002	AS Effluent #1 Cert# 2064	TO-15	NCK	9	PASI-M
10441103003	AA-1 North #1 (980 Hurricane)	TO-15	NCK	6	PASI-M
		TO-15	NCK	3	PASI-M
10441103004	AA-1 North #1 Cert# 0944	TO-15	NCK	9	PASI-M
10441103005	AA-2 East #1 (980 Hurricane)	TO-15	NCK	6	PASI-M
		TO-15	NCK	3	PASI-M
10441103006	AA-2 East #1 Cert# 1265	TO-15	AFV	9	PASI-M
10441103007	AA-3 South #1 (980 Hurricane)	TO-15	MJL	6	PASI-M
		TO-15	MJL	3	PASI-M
10441103008	AA-3 South #1 Cert# 2750	TO-15	AFV	9	PASI-M
10441103009	AA-4 West #1 (980 Hurricane)	TO-15	MJL	6	PASI-M
		TO-15	MJL	3	PASI-M
10441103010	AA-4 West #1 Cert# 0603	TO-15	MJL	9	PASI-M
10441103011	AA-5 West #2 (980 Hurricane)	TO-15	MJL	6	PASI-M
		TO-15	MJL	3	PASI-M
10441103012	AA-5 West #2 Cert# 2700	TO-15	CH1	9	PASI-M
10441103013	AA Duplicate (980 Hurricane)	TO-15	MJL	6	PASI-M
		TO-15	MJL	3	PASI-M
10441103014	AA Duplicate Cert# 0856	TO-15	AFV	9	PASI-M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AS Effluent #1 (980 Hurricane) Lab ID: 10441103001 Collected: 07/26/18 17:25 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	39.2	ug/m3	1.3	1.52		07/27/18 19:16	75-34-3	
1,2-Dichloroethane	17.9	ug/m3	0.62	1.52		07/27/18 19:16	107-06-2	
cis-1,2-Dichloroethene	411	ug/m3	36.8	45.6		07/29/18 15:37	156-59-2	
trans-1,2-Dichloroethene	3.1	ug/m3	1.2	1.52		07/27/18 19:16	156-60-5	
Methylene Chloride	ND	ug/m3	5.4	1.52		07/27/18 19:16	75-09-2	
Tetrachloroethene	1950	ug/m3	31.4	45.6		07/29/18 15:37	127-18-4	
1,1,1-Trichloroethane	285	ug/m3	50.6	45.6		07/29/18 15:37	71-55-6	
Vinyl chloride	12.1	ug/m3	0.40	1.52		07/27/18 19:16	75-01-4	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
Trichloroethene	665	ug/m3	2.5	45.6		07/29/18 15:37	79-01-6	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AS Effluent #1 Cert# 2064		Lab ID: 10441103002		Collected: 07/26/18 17:25		Received: 07/27/18 09:30		Matrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
Individual Can Certification	Analytical Method: TO-15								
1,1-Dichloroethane	ND	ug/m3	0.82	1		07/16/18 14:39	75-34-3		
1,2-Dichloroethane	ND	ug/m3	0.41	1		07/16/18 14:39	107-06-2	4M	
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/16/18 14:39	156-59-2		
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/16/18 14:39	156-60-5		
Methylene Chloride	ND	ug/m3	3.5	1		07/16/18 14:39	75-09-2		
Tetrachloroethene	ND	ug/m3	0.69	1		07/16/18 14:39	127-18-4		
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		07/16/18 14:39	71-55-6		
Trichloroethene	ND	ug/m3	0.55	1		07/16/18 14:39	79-01-6	5M	
Vinyl chloride	ND	ug/m3	0.26	1		07/16/18 14:39	75-01-4	3M	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-1 North #1 (980 Hurricane) Lab ID: 10441103003 Collected: 07/26/18 17:39 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.55		07/27/18 15:13	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:13	156-60-5	
Methylene Chloride	ND	ug/m3	5.5	1.55		07/27/18 15:13	75-09-2	
Tetrachloroethene	ND	ug/m3	1.1	1.55		07/27/18 15:13	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.55		07/27/18 15:13	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.064	1.55		07/27/18 15:13	107-06-2	
Trichloroethene	ND	ug/m3	0.085	1.55		07/27/18 15:13	79-01-6	
Vinyl chloride	ND	ug/m3	0.040	1.55		07/27/18 15:13	75-01-4	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-1 North #1 Cert# 0944 Lab ID: 10441103004 Collected: 07/26/18 15:39 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		06/15/18 10:22	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		06/15/18 10:22	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/15/18 10:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/15/18 10:22	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		06/15/18 10:22	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		06/15/18 10:22	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		06/15/18 10:22	71-55-6	
Trichloroethene	ND	ug/m3	0.55	1		06/15/18 10:22	79-01-6	5M
Vinyl chloride	ND	ug/m3	0.26	1		06/15/18 10:22	75-01-4	3M

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Minneapolis, MN 55414

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-2 East #1 (980 Hurricane) Lab ID: 10441103005 Collected: 07/26/18 16:31 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.55		07/27/18 15:48	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 15:48	156-60-5	
Methylene Chloride	ND	ug/m3	5.5	1.55		07/27/18 15:48	75-09-2	
Tetrachloroethene	ND	ug/m3	1.1	1.55		07/27/18 15:48	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.55		07/27/18 15:48	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.064	1.55		07/27/18 15:48	107-06-2	
Trichloroethene	0.20	ug/m3	0.085	1.55		07/27/18 15:48	79-01-6	1M
Vinyl chloride	ND	ug/m3	0.040	1.55		07/27/18 15:48	75-01-4	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-2 East #1 Cert# 1265		Lab ID: 10441103006	Collected: 07/26/18 16:31	Received: 07/27/18 09:30	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		07/05/18 13:26	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		07/05/18 13:26	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/05/18 13:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/05/18 13:26	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		07/05/18 13:26	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		07/05/18 13:26	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		07/05/18 13:26	71-55-6	
Trichloroethene	0.48J	ug/m3	0.55	1		07/05/18 13:26	79-01-6	2M
Vinyl chloride	ND	ug/m3	0.26	1		07/05/18 13:26	75-01-4	3M

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Minneapolis, MN 55414

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-3 South #1 (980 Hurricane) Lab ID: 10441103007 Collected: 07/26/18 17:37 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.52		07/27/18 16:23	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.52		07/27/18 16:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.52		07/27/18 16:23	156-60-5	
Methylene Chloride	ND	ug/m3	5.4	1.52		07/27/18 16:23	75-09-2	
Tetrachloroethene	ND	ug/m3	1.0	1.52		07/27/18 16:23	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.52		07/27/18 16:23	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.062	1.52		07/27/18 16:23	107-06-2	
Trichloroethene	ND	ug/m3	0.083	1.52		07/27/18 16:23	79-01-6	
Vinyl chloride	ND	ug/m3	0.040	1.52		07/27/18 16:23	75-01-4	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-3 South #1 Cert# 2750 Lab ID: 10441103008 Collected: 07/26/18 17:37 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		07/18/18 14:59	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		07/18/18 14:59	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/18/18 14:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/18/18 14:59	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		07/18/18 14:59	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		07/18/18 14:59	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		07/18/18 14:59	71-55-6	
Trichloroethene	ND	ug/m3	0.55	1		07/18/18 14:59	79-01-6	5M
Vinyl chloride	ND	ug/m3	0.26	1		07/18/18 14:59	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-4 West #1 (980 Hurricane) Lab ID: 10441103009 Collected: 07/26/18 17:05 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.58		07/27/18 16:57	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 16:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 16:57	156-60-5	
Methylene Chloride	ND	ug/m3	5.6	1.58		07/27/18 16:57	75-09-2	
Tetrachloroethene	ND	ug/m3	1.1	1.58		07/27/18 16:57	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.8	1.58		07/27/18 16:57	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.065	1.58		07/27/18 16:57	107-06-2	
Trichloroethene	0.087	ug/m3	0.086	1.58		07/27/18 16:57	79-01-6	
Vinyl chloride	ND	ug/m3	0.041	1.58		07/27/18 16:57	75-01-4	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-4 West #1 Cert# 0603 Lab ID: 10441103010 Collected: 07/26/18 17:05 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		06/23/18 13:24	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		06/23/18 13:24	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/23/18 13:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		06/23/18 13:24	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		06/23/18 13:24	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		06/23/18 13:24	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		06/23/18 13:24	71-55-6	
Trichloroethene	ND	ug/m3	0.55	1		06/23/18 13:24	79-01-6	5M
Vinyl chloride	ND	ug/m3	0.26	1		06/23/18 13:24	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-5 West #2 (980 Hurricane) Lab ID: 10441103011 Collected: 07/26/18 17:16 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.58		07/27/18 18:07	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 18:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.58		07/27/18 18:07	156-60-5	
Methylene Chloride	ND	ug/m3	5.6	1.58		07/27/18 18:07	75-09-2	
Tetrachloroethene	ND	ug/m3	1.1	1.58		07/27/18 18:07	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.8	1.58		07/27/18 18:07	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.065	1.58		07/27/18 18:07	107-06-2	
Trichloroethene	0.43	ug/m3	0.086	1.58		07/27/18 18:07	79-01-6	
Vinyl chloride	ND	ug/m3	0.041	1.58		07/27/18 18:07	75-01-4	

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA-5 West #2 Cert# 2700		Lab ID: 10441103012	Collected: 07/26/18 17:16	Received: 07/27/18 09:30	Matrix: Air			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	0.82	1		07/20/18 10:11	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.41	1		07/20/18 10:11	107-06-2	4M
cis-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/20/18 10:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.81	1		07/20/18 10:11	156-60-5	
Methylene Chloride	ND	ug/m3	3.5	1		07/20/18 10:11	75-09-2	
Tetrachloroethene	ND	ug/m3	0.69	1		07/20/18 10:11	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.1	1		07/20/18 10:11	71-55-6	
Trichloroethene	ND	ug/m3	0.55	1		07/20/18 10:11	79-01-6	5M
Vinyl chloride	ND	ug/m3	0.26	1		07/20/18 10:11	75-01-4	3M

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ANALYTICAL RESULTS

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

Sample: AA Duplicate (980 Hurricane) Lab ID: 10441103013 Collected: 07/26/18 16:31 Received: 07/27/18 09:30 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR		Analytical Method: TO-15						
1,1-Dichloroethane	ND	ug/m3	1.3	1.55		07/27/18 18:41	75-34-3	
cis-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 18:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.2	1.55		07/27/18 18:41	156-60-5	
Methylene Chloride	ND	ug/m3	5.5	1.55		07/27/18 18:41	75-09-2	
Tetrachloroethene	ND	ug/m3	1.1	1.55		07/27/18 18:41	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	1.7	1.55		07/27/18 18:41	71-55-6	
TO15 MSV AIR SIM SCAN		Analytical Method: TO-15						
1,2-Dichloroethane	ND	ug/m3	0.064	1.55		07/27/18 18:41	107-06-2	
Trichloroethene	0.16	ug/m3	0.085	1.55		07/27/18 18:41	79-01-6	
Vinyl chloride	ND	ug/m3	0.040	1.55		07/27/18 18:41	75-01-4	

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QUALITY CONTROL DATA

Project: Former Amphenol Facility-Revised Report

Pace Project No.: 10441103

QC Batch: 553458 Analysis Method: TO-15
 QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
 Associated Lab Samples: 10441103001, 10441103003, 10441103005, 10441103007, 10441103009, 10441103011, 10441103013

METHOD BLANK: 3007016

Matrix: Air

Associated Lab Samples: 10441103001, 10441103003, 10441103005, 10441103007, 10441103009, 10441103011, 10441103013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	1.1	07/27/18 11:24	
1,1-Dichloroethane	ug/m3	ND	0.82	07/27/18 11:24	
1,2-Dichloroethane	ug/m3	ND	0.41	07/27/18 11:24	
cis-1,2-Dichloroethene	ug/m3	ND	0.81	07/27/18 11:24	
Methylene Chloride	ug/m3	ND	3.5	07/27/18 11:24	
Tetrachloroethene	ug/m3	ND	0.69	07/27/18 11:24	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	07/27/18 11:24	
Vinyl chloride	ug/m3	ND	0.26	07/27/18 11:24	

LABORATORY CONTROL SAMPLE: 3007017

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	58.1	105	70-135	
1,1-Dichloroethane	ug/m3	41.1	41.2	100	70-134	
1,2-Dichloroethane	ug/m3	41.1	42.3	103	70-136	
cis-1,2-Dichloroethene	ug/m3	40.3	41.0	102	70-136	
Methylene Chloride	ug/m3	177	174	98	67-132	
Tetrachloroethene	ug/m3	68.9	74.5	108	70-133	
trans-1,2-Dichloroethene	ug/m3	40.3	45.2	112	70-132	
Vinyl chloride	ug/m3	26	25.7	99	70-141	

SAMPLE DUPLICATE: 3007019

Parameter	Units	10441103009 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,2-Dichloroethane	ug/m3	ND	ND		25	
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Methylene Chloride	ug/m3	ND	ND		25	
Tetrachloroethene	ug/m3	ND	.52J		25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Vinyl chloride	ug/m3	ND	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Attachment H

Calculated Groundwater Remedial System VOC Emissions

DRAFT

Attachment H
Estimated Groundwater Remedial System Air Stripper Emissions
Former Amphenol Facility
EPA ID # IND 044 587 848
980 Hurricane Road
Franklin, IN 46131

VOC Compound	Laboratory concentration (ug/m ³)	Maximum observed flow/day (m ³)	ug/day	lbs/day	lbs/yr
TCE	665	2,854.34	1,898,136.10	0.0042	1.5274
PCE	1950	2,854.34	5,565,963.00	0.0123	4.4789
VC	12.1	2,854.34	34,537.51	0.0001	0.0278
1,1,1 TCE	285	2,854.34	813,486.90	0.0018	0.6546
trans DCE	3.1	2,854.34	8,848.45	0.0000	0.0071
cis DCE	411	2,854.34	1,173,133.74	0.0026	0.9440
1,1 DCA	39.2	2,854.34	111,890.13	0.0002	0.0900
1,2 DCA	17.9	2,854.34	51,092.69	0.0001	0.0411
Total VOCs				0.0213	7.7710

Maximum observed flow= 70 cfm

Flow/day =(70 cfm x 60 min/hr x 24 hr/day) / 35.314667 ft³/m³

ug/day= conc ug/m³ x flow m³

lbs/day= ug/day x 1^{e-6}/453.5 g/lb

Notes:

Calculations assume operation 24 hours/day x 365 days/yr.

Concentrations based upon laboratory results of sample obtained 7/26/18.

Sample obtained directly from air stripper exhaust pipe inside treatment bldg.

Sample collected using 6-liter summa cannister with 8 hr. flow regulator.

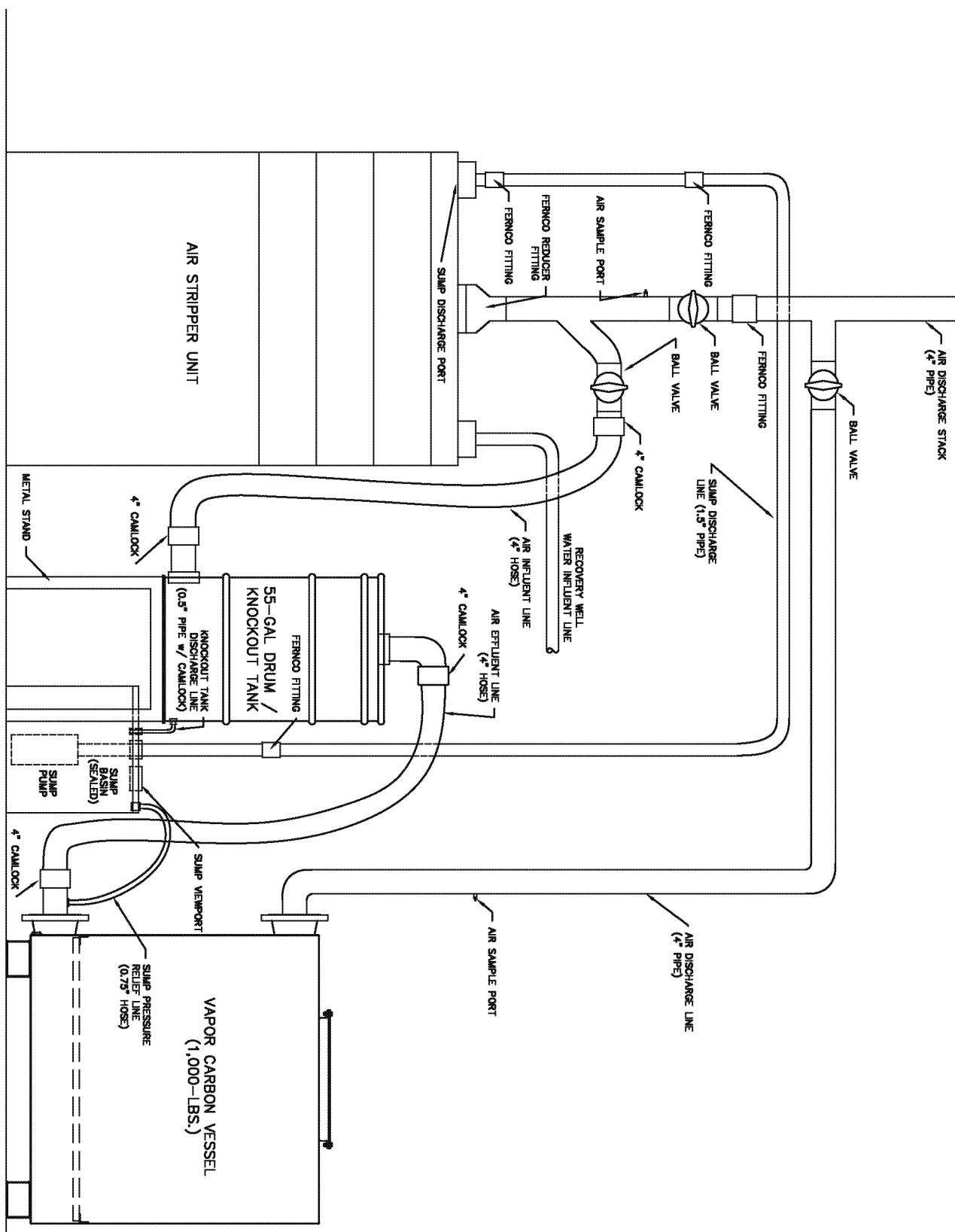
Sample analyzed by Pace Analytical Services LLC, Minneapolis, MN using EPA Method TO-15/TO-15 SIM.

Maximum flow measurement obtained from the air stripper exhaust pipe (4-inch diameter) using a Fluke 922 Micromanometer.



Attachment I
Vapor Treatment System Drawings and Specification Sheets

DRAFT



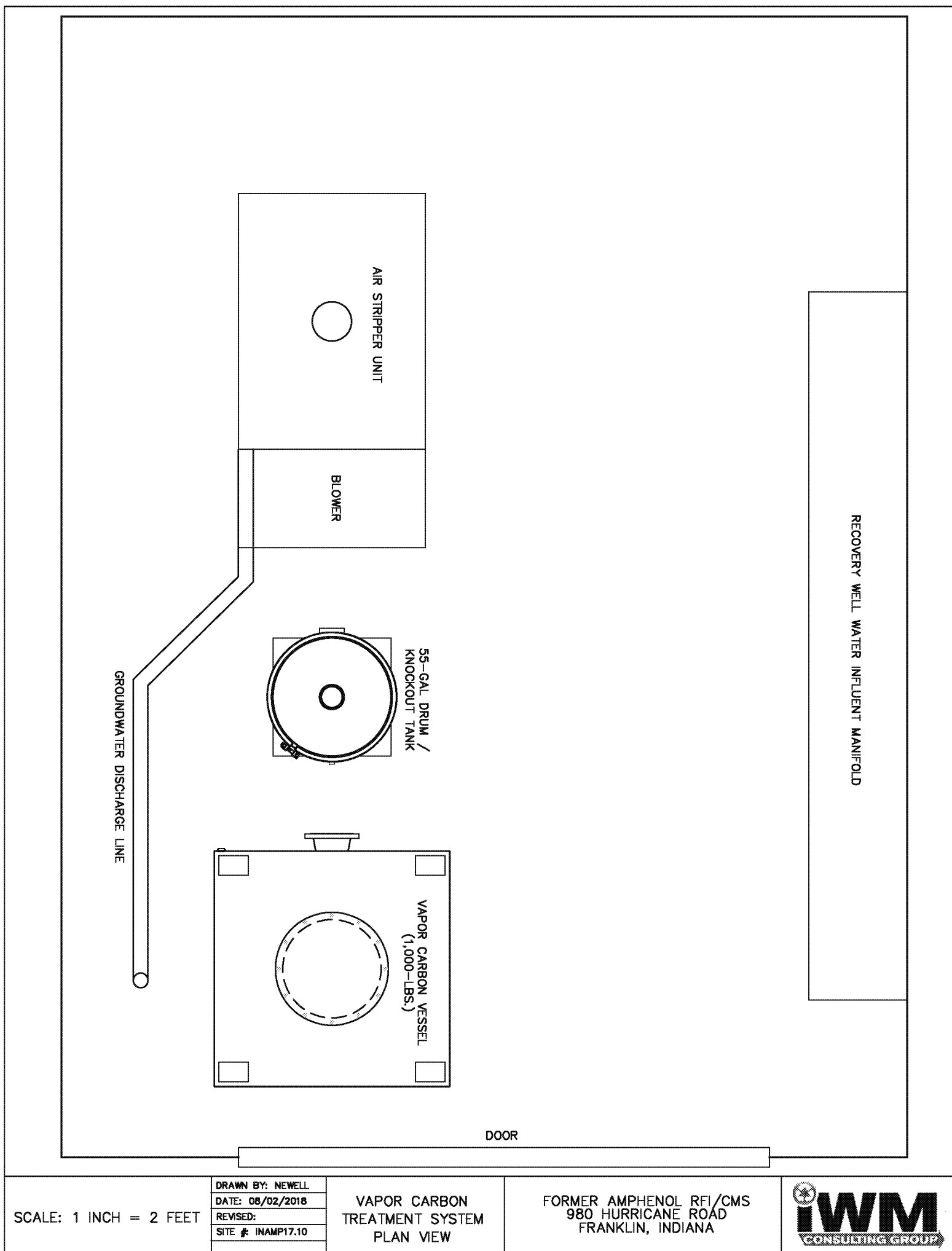
NOT TO SCALE

DRAWN BY: NEWELL
DATE: 08/02/2018
REVISED: 08/09/2018
SITE #: INAMP17.10

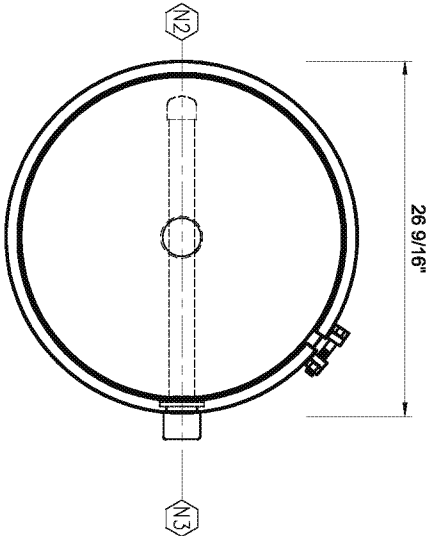
VAPOR CARBON
TREATMENT SYSTEM
PI & D

FORMER AMPHENOL RFI/CMS
980 HURRICANE ROAD
FRANKLIN, INDIANA

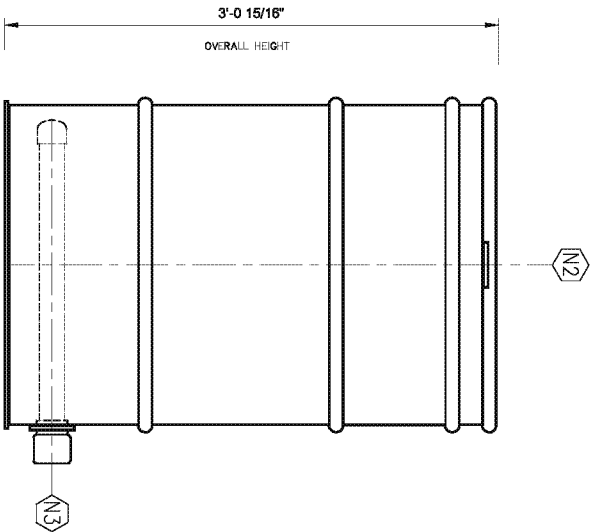




Scale	1	2	3	4
Revision note			Date	Signature Checked



PLAN VIEW
TRUE ORIENTATION

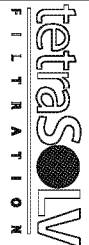


ELEVATION VIEW
NOT TRUE ORIENTATION

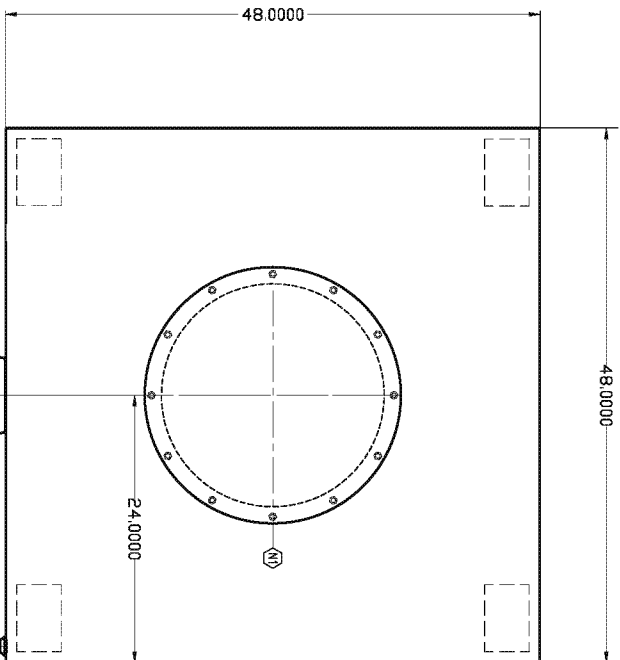
NOZZLE SCHEDULE			
ID	Description	Service	
N1			
N2	2" 3000# Thrd Coupling FNP T	Process Inlet	
N3	2" 3000# Thrd Coupling FNP T	Process Outlet	
N4			
N5			
N6			
N7			

COATINGS SCHEDULE		
Surface	Surface Preparation	Product Specification
Internal - 1	n/a	n/a
Internal - 2	n/a	n/a
External - 1	n/a	n/a
External - 2	n/a	n/a
External - 3	n/a	n/a

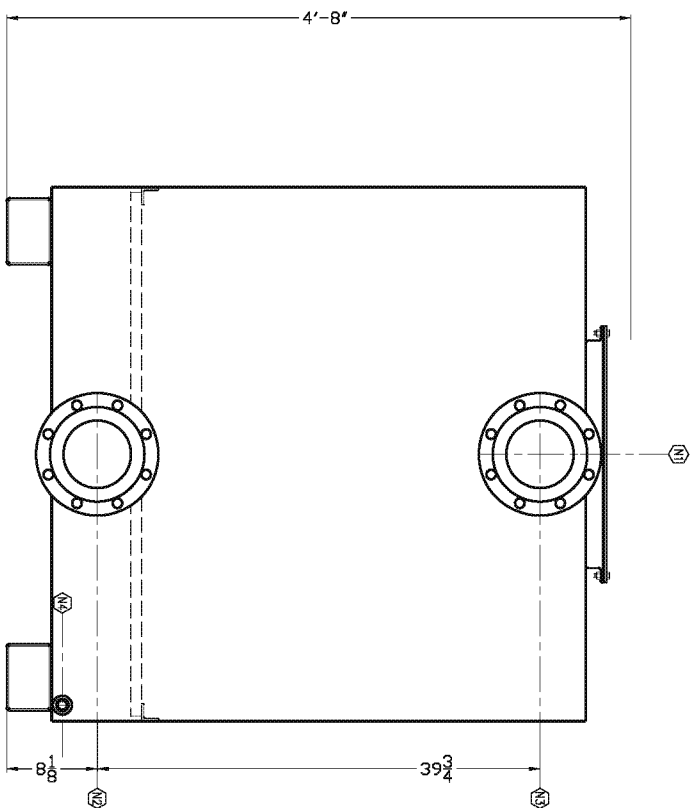
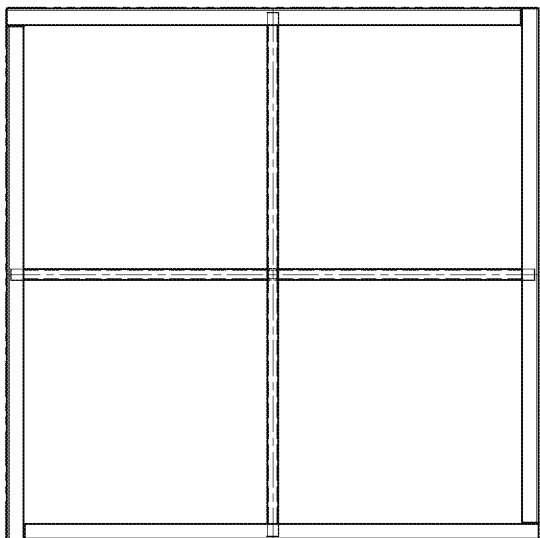
NOTES	
Item	Details
Construction	Non-Code Design Pressure: 10 PSIG @ 140 DEG F
Mfr's Vessel	Shell: SA-36 Header: SA-36 Pipe: SA-53 (see nozzle detail for others)
Mfr's Interiors	n/a
n/a	n/a
n/a	n/a
Media	n/a

Designed by D Shreves	Approved by E Patterson	Customer -----	Job Number -----	Date December 9, 2013	Scale/Unit NTS / inch
			1424 ABRAM DRIVE ANDERSON, INDIANA 46013 Ph: (765) 643-3941 F: (765) 643-3949		
AFD-55				Drawing# M-1 / R1	

RevNo	Revision note	Date	Signature	Checked
-------	---------------	------	-----------	---------



PLAN VIEW




ELEVATION VIEW

NOZZLE SCHEDULE		
ID	Description	Service
M1	20" Angle Ring w/ Cover	Upper bed access with Cover (SA-36), Bol'ts, Neoprene Gasket
N2	6" 150# ANSI Flange	Process Inlet
N3	6" 150# ANSI Flange	Process Outlet
N4	1/2" 150# Third Tank Flange	Drain w/1/2" Ball Valve
N5		
N6		
N7		

COATINGS SCHEDULE		
Surface	Surface Preparation	Product Specification
Internal - 1	SSPC-SP6	Carboline Carbogard 635 6-10 mils DFT per Coat
Internal - 2	Inspect	n/a
External - 1	SSPC-SP6	Carboline Carbogard 635 6-10 mils DFT per Coat
External - 2	n/a	Carboline Carboline 8845 3-5 mils DFT
External - 3	n/a	n/a

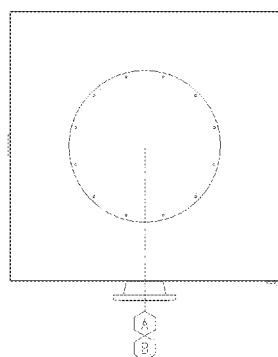
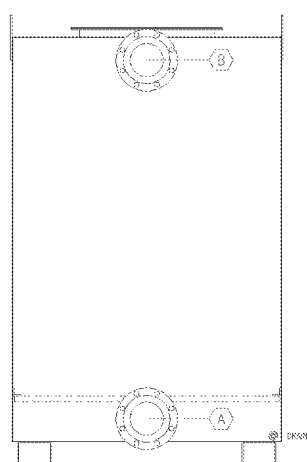
NOTES	
Item	Details
Construction	Non-Grade Design Pressure: 3 PSIG @ 140 DEG F.
Man's Vessel	Shell: SA-36 Heads: SA-36 Pipe: SA-53 (see nozzle detail for others)
Man's Interis	S5 False Floor , Diffuser, Hose: PVC Gaskets: Neoprene
n/a	n/a
n/a	n/a
Media	TBD

Designed by D. Sirevess	Approved by E. Peterson	Customer Stock	Job Number	Date April 6, 2016	Scale/unit N/S / inch
 <p>1424 ARAHAM DRIVE ANDERSON, ND 58401 Ph: 783 643 3941 Fk: 783 643 3945</p>			VF-1000 Media Filter		
F I L T R A T I O N			Drawing# M-1 / R1		

VF SERIES FILTERS

VF series filters are designed to treat vapor streams in a wide variety of adsorption applications. The modular design enables the units to easily fit into a wide variety of installations. Standard features include steel construction with epoxy internal coating, efficient internal distributor array, forklift skid and lifting eyes.

A wide variety of options and contact medias are available, contact our sales and engineering team to assist in your application.



A - Process Inlet
B - Process Outlet
C - Drain
Manway standard size 20" Round.

Standard Model Shown - Detailed Submittal Drawings Available

VF SERIES STANDARD SPECIFICATIONS

Model Number	VF-1000	VF-2000	VF-3000	VF-5000	VF-10000	RB20K	V400C
Overall Height	5'3"	6'5"	7'7"	7'10"	9'0"	9'4"	9'4"
Footprint	4'x4'	4'x4'	4'x6'	6'x8'	8'x10'	8'x20'	8'x40'
Process Connection	6" ANSI	6" ANSI	8" ANSI	10" ANSI	12" ANSI	18" ANSI	18" ANSI
Typical GAC Fill (28#/FT ³)	1,000 Lbs	2,000 Lbs	3,000 Lbs	5,000 Lbs	10,000 Lbs	20,000 Lbs	40,000 Lbs
Shipping Weight (empty)	450 Lbs	650 Lbs	1,500 Lbs	2,100 Lbs	4,500 Lbs	8,350 Lbs	9820 Lbs
Operational Weight	1,750 Lbs	3,250 Lbs	5,400 Lbs	8,600 Lbs	17,500 Lbs	34,850 Lbs	49820 Lbs
air flow at standard conditions	15 to 720 CFM	15 to 720 CFM	240 to 1500 CFM	480 to 3000 CFM	800 to 5000 CFM	1600 to 10,000 CFM	3200 to 20,000 CFM
Available Bed Volume	36 FT ³	72 FT ³	108 FT ³	180 FT ³	360 FT ³	720 FT ³	1440 FT ³
Maximum Pressure	2 PSIG	2 PSIG	1 PSIG	1 PSIG	1 PSIG	1 PSIG	1 PSIG
Maximum Vacuum	6" Hg	4" Hg	2" Hg	1" Hg	NR	NR	NR

ACTIVATED CARBON DATA SHEET

Stags - CV 1100

Applications

VOC Abatement
Solvent Recovery
Air Purification
BTEX Removal

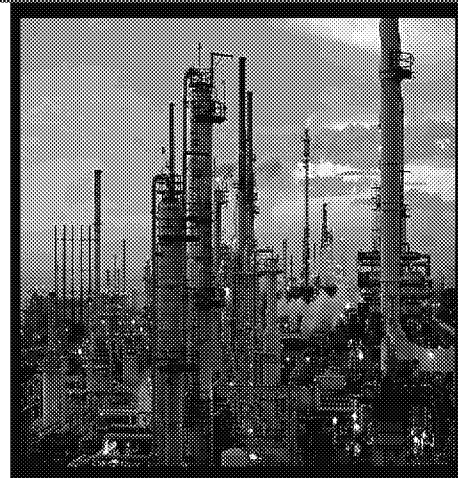
Features / Benefits

High Activity
High Hardness
Low Attrition Rates
High Purity
No Preconditioning Required

Packaging

25 Kg bags
500 Kg bulk bags

Stags - CV 1100 is a high activity, coconut based produced via the steam activation process. Stags - CV 1100 is a high VOC capacity carbon which is excellent for fugitive emissions and solvent recovery. The high hardness and low dust levels makes it very easy to use. Stags - CV 1100 can be sold separately or part of a turnkey package involving equipment and service.



Specifications

Ball Pan Hardness	99.5
Carbon Tetrachloride Activity	60 min (g/100g)
Iodine Number	1100 mg/g
Apparent Density	0.50-0.52 g/cc
	28 - 30 lbs/ft ³
Total Surface Area	1100 m ² /g
Moisture	5% max
Mesh Size +4	less than 5%
Mesh Size -8	less than 5%

STAGS

Phone: 713.703.6516
E-mail: info@tetrasolv.com



CAUTION Activated carbon can remove oxygen from air under wet or humid conditions. Care should be taken when entering confined spaces where wet activated carbon is present. Use proper breathing apparatus to prevent prolonged dust exposure.

NOTICE Stags reserve the right to change product specifications without prior notification. The information contained in this datasheet is intended to assist a customer in the evaluation and carbon selection. Stags or any of its affiliations assumes no obligation or liability for the usage of the information in this datasheet. No guarantees or warranties, expressed or implied, are provided and the user must accept full responsibility for performance of carbon based on this data.